

APR 1 1960
CRPL-F 187 PART B

FOR OFFICIAL USE

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PART B

SOLAR - GEOPHYSICAL DATA

ISSUED
MARCH 1960

U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

SOLAR - GEOPHYSICAL DATA

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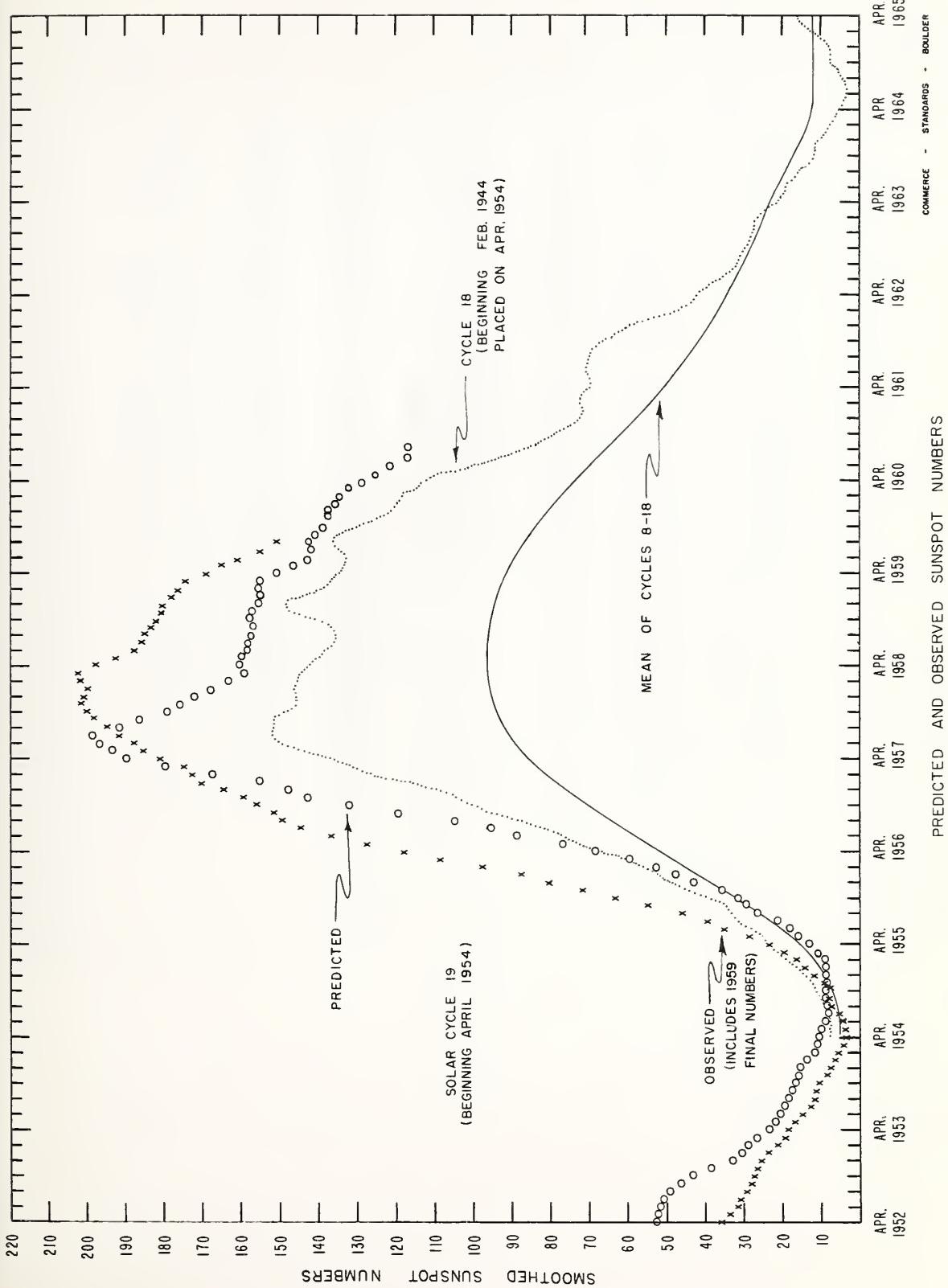
- (a) IGC 1959 Alerts and SWI

INTRODUCTION

The descriptive text is published quarterly or whenever context of the report is changed. The last issue in which the text appeared was CRPL-F186 Part B issued February 1960.

DAILY SOLAR INDICES

Jan. 1960	American Relative Sunspot Numbers RA'	Feb. 1960	Zurich Provisional Relative Sunspot Numbers R _Z	Daily Values Solar Flux at 2800 Mc, Ottawa, Canada Flux
1	113	1	173	225
2	112	2	191	213
3	134	3	184	215
4	157	4	152	209
5	197	5	142	209
6	191	6	145	192
7	196	7	123	187
8	182	8	116	183
9	148	9	143	183
10	158	10	143	178
11	132	11	115	175
12	127	12	116	166
13	124	13	97	167
14	121	14	114	167
15	118	15	94	160
16	121	16	84	158
17	120	17	73	153
18	94	18	60	151
19	87	19	50	-
20	94	20	49	142
21	105	21	46	156
22	135	22	50	149
23	111	23	56	143
24	153	24	74	140
25	171	25	80	147
26	164	26	82	147
27	195	27	89	147
28	184	28	82	140
29	199	29	78	140
30	194			
31	193			
Mean:		Mean:		169.4
		103.5		



ZURICH FINAL RELATIVE SUNSPOT NUMBERS

1959

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
1	221	141	158	243	120	152	147	194	290	65	136	170
2	225	141	151	242	112	133	118	210	256	76	121	165
3	229	140	151	174	113	152	138	213	202	89	97	160
4	231	137	146	159	105	166	158	225	161	101	103	163
5	243	128	152	124	112	162	136	212	148	115	91	142
6	238	114	148	108	138	180	127	207	152	128	98	147
7	247	124	150	107	156	181	120	179	135	130	114	141
8	246	90	155	136	188	192	131	175	136	115	131	145
9	245	87	164	161	238	188	129	170	157	103	136	94
10	224	100	156	177	262	160	127	155	141	91	142	89
11	218	100	148	197	287	172	133	180	155	87	153	82
12	203	101	126	189	276	176	135	160	170	81	154	75
13	192	106	159	178	257	165	160	125	148	78	149	73
14	128	129	173	193	227	170	180	139	151	102	137	88
15	120	133	216	174	204	158	176	144	161	96	127	123
16	143	144	225	153	182	172	190	157	130	116	113	113
17	168	170	228	126	187	161	193	166	87	107	83	107
18	179	170	230	114	198	174	195	174	100	116	73	117
19	202	175	234	117	185	182	184	182	120	111	69	134
20	240	160	238	135	187	173	160	180	149	108	65	133
21	255	163	230	128	151	162	132	200	143	111	70	131
22	278	171	208	138	145	170	94	204	157	129	110	126
23	270	186	194	186	149	188	113	205	143	135	131	122
24	261	190	178	186	143	157	108	217	155	143	151	116
25	255	181	199	203	178	180	118	212	132	137	162	121
26	252	176	190	204	188	184	134	220	110	126	161	124
27	263	163	178	175	177	186	156	231	102	128	157	132
28	239	186	173	172	132	160	181	274	91	129	151	127
29	213		217	160	99	158	182	301	87	129	161	136
30	167		233	141	106	147	193	292	86	131	175	127
31	143		248		131		190	284		141		153
Mean	217.4	143.1	185.7	163.3	172.0	168.7	149.6	199.6	145.2	111.4	124.0	125.0

COMMERCE - STANDARDS - BOULDER

CALCIUM PLAGUE AND SUNSPOT REGIONS

IIa

FEBRUARY 1960

CMP Feb. 1960	Lat	McMath Plage Number	Return of Region	Calcium Plague Data			Sunspot Data		
				CMP Values Area	Int.	History, Age	CMP Values Area Count		History
01.6	N25	5553	New	800	2	l / l	1		
01.7	N09	5552	5517	2000	2	l - l	6	270	3
02.5	N20	5555	5520	2800	3	l - l	2	290	7
03.2	S17	5554	5515	1000	2	l - l	5		
04.1	N24	5556	5520	2400	3	l - l	2	100	1
04.1	S03	5558	5523	600	1.5	l \ l	2		
04.9	S19	5560	New	1000	3	l / l	1	170	8
05.5	N24	5559	5520	(500)	(1)	l \ d	2		b / l
06.4	N10	5565	New	700	2	b / l	1		
06.5	S15	5562	5525	4500	3	l - l	2	580	8
06.6	S26	5561	5522	1500	2	l - l	2		
08.4	N17	5563	5527	4800	2.5	l - l	3	310	5
09.3	S12	5564	New	(1900)	(1.5)	l \ d	1		
11.9	N21	5566	New	3100	2.5	l / l	1	1210	3
12.5	S21	5567	*	1800	3	l - l	2	120	1
12.6	N10	5569	5534	400	1.5	l - l	5		
15.0	S24	5572	New	1800	2.5	l - l	1	120	1
15.2	N18	5570	5538	3800	3.5	l - l	2	1700	27
15.2	S08	5571	New	900	2	l - l	1		
17.5	N11	5574	5540	4200	2.5	l \ l	4		
19.0	N19	5575	5539	1600	2.5	l - l	4		
20.6	N30	5576	5542	1000	1.5	l - l	2		
21.1	N13	5577	5546	1600	2	l - l	11		
22.2	S10	5578	5547	700	1	l - l	3		
22.6	N23	5582	New	800	2	b / l	1	100	2
24.1	N14	5579	5550	4500	3	l - l	4		
24.9	S21	5580	New	1300	3.5	l - l	1	220	2
25.7	N05	5581	5550	6100	3	l - l	4	440	10
28.0	S12	5583	5551	2700	2.5	l - l	7	50	1
28.1	N11	5584	5552	2800	2.5	l - l	7	280	2

* Formed in 5536 during last rotation.

COMMERCE - STANDARDS - BOULDER

FEBRUARY 1960

CME Feb 1960	North East Quadrant (observed 7 days earlier)				South East Quadrant (observed 7 days earlier)				South West Quadrant (observed 7 days later)				North West Quadrant (observed 7 days later)				
	G ₆	G ₁	R ₆	R ₁	G ₆	G ₁	R ₆	R ₁	G ₆	G ₁	R ₆	R ₁	G ₆	G ₁	R ₆	R ₁	
1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2	171	229	26	43	149	231	45	75	x	x	x	x	x	x	x	x	x
3	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
4	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
5	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
6	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
7	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
8	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
9	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
10	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
11	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
12	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
13	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
14	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
15	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
16	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
17	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
18	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
19	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
20	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
21	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
22	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
23	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
24	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
25	195	320	x	x	57	86	x	x	x	x	x	x	x	x	x	x	x
26	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
27	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
28	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
29	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

x - no observations.

a - index computed from low weight data.

* - yellow line observed.

SOLAR FLARES

FEBRUARY 1960

OBSERVATORY	DATE FEB 1960	OBSERVED TIME			MAX. PHASE	LAT. MER. DIST.	APPROX. MERC. PLACE REGION	LOCATION	DURA- TION — MINUTES	IM- POR- TANCE — D	MEASUREMENTS			PROVISIONAL IONOSPHERIC EFFECT	
		START	END	UNIVERSAL TIME							TIME — UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH H _a	
ARCETRI	01	1002		1016 D			S16	E73	5562	14 D	1	3	3	20	S-SWF
LOCKHEED	02	1220 E	1235 D	1855			N09	W48	5550	15 D	1	3	2	1855	2•50
{ WENDEL	03	0818 E	0908 D				S14	W35	5551	45	1	3	3	0839	4•13
{ ARCETRI	03	0823 E	0902 D				N10	W25	5551	39 D	2	3	3	10.00	
{ WENDEL	03	0943 E	1014 D				N09	W22	5552	31 D	1	3	3	5•24	
{ WENDEL	03	1007 E	1015 D				S16	W37	5551	39 D	1	3	3	7•00	
WENDEL	03	1102 E	1120 D				S15	W39	5551	18 D	1	3	3	4•00	
WENDEL	03	1210 E	1306 D	1229			N11	W24	5552	56 D	2+	2	2	4•00	
{ WENDEL	03	1235 E	1254 D				N10	W25	5552	19 D	2	2	2	14•00	
{ ARCETRI	03	1708	1850				S13	W40	5551	102	2+	2	1	1729	6•00
MCMATH	03	2015	2043 D	2025			N10	W32	5552	28 D	1	1	1	2025	4•00
SAC PEAK	03	2150 E	2155 D	2150 E			N18	W28	5555	5 D	2	1	1	5•77	
MCMATH	04	1336 E	1423				S15	W48	5551	47 D	1	1	1	1357	3•00
{ MC MATH	04	1600	1635	1615			S14	W53	5551	35	1	1	1	1615	2•00
{ HUANCAYO	04	1615 E	1641	1616			S15	W48	5551	26 D	1	1	1	1616	3•00
{ SAC PEAK	04	1636	1652 D	1650 U			S15	E23	5562	16 D	1	2	2	2•80	2•60
{ MC MATH	04	1636	1830	1830			S15	E25	5562	114	1+	1	1	1710	16
{ HUANCAYO	04	1641	1718	1643			S14	E24	5562	37	1	1	1	1643	5•00
LOCKHEED	04	1725 E	1750	1725 E			S14	E24	5562	25 D	1	1	1	3•40	3•30
MC MATH	04	1927	1948	1929			N09	W42	5552	21	1	1	1	1725	10
LOCKHEED	05	1731	1805	1737			S25	E15	5561	34	1	2	2	1929	2•00
{ LOCKHEED	05	1943 U	2007 D	1949 U			N12	W53	5552	24 D	1	2	2	1738	40
HAWAII	05	1946	1958 D	1958 U			N07	W60	5552	12 D	1	2	1	1949	30
{ LOCKHEED	05	2045 U	2059 U	2048 U			S15	W13	5560	14 D	1	2	2	1950	1•10
{ SAC PEAK	05	2112	2140	2122			N12	W57	5552	28	1+	2	1	2048	40
HAWAII	05	2122 E	2154	2204			N08	W60	5552	32 D	1+	2	2	2124	27
{ SAC PEAK	05	2114	2204	2118			S18	W68	5551	50	1	2	2	2158	18
HAWAII	05	2154	2204 D	2158			S14	E10	5562	10 D	1	2	2	2158	18
HAWAII	05	2320	2410	2336			S14	E16	5562	50	1	3	3	2336	10
HAWAII	06	0130	0146	0132			S16	W17	5560	16	1	2	2	0132	1•00
ARCETRI	06	0805 E	1227 E	1233 D			S13	E01	5562	16	1	2	2	1227	3•00
DUNSINK	06	2010	2024	2013			N06	W65	5552	6 D	1	3	3	2013	2•96
HAWAII	06	2054	2126	2110			S13	W05	5562	14	1	3	3	2013	2•24
SAC PEAK	06						N13	W65	5552	32	1	1	1		
WENDEL	07	0910 E	1007 D				N09	W76	5552	57 D	1+	2	2	0132	1•00
WENDEL	07	0932 E	0956 D				N18	W67	5552	24 D	1	2	2	1227	3•00
WENDEL	07	1022 E	1128 D				N09	W77	5552	66 D	1	2	2	1227	4•00
WENDEL	07	1022 E	1135 D				S13	W12	5562	73 D	1+	2	2	1227	5•00
WENDEL	07	1117	1137 D				N19	E20	5563	20 D	1	2	2	1227	7•00
WENDEL	07	1133	1148				N09	W78	5552	15	1+	2	2	1227	3•00
WENDEL	07	1154 E	1222				N09	W78	5552	28 D	1	2	2	1227	3•00
WENDEL	07	1312	1328 D				N19	E16	5563	16 D	1	2	2	1227	3•00
WENDEL	07	1331 E	1358 D				S19	E68	5557	27 D	1	2	2	1227	3•00
WENDEL	07	1450 E	1502 D				N10	W75	5552	12 D	1	2	2	1227	3•00
WENDEL	08	0914 E	0920 D				S27	E85	5572	6 D	1	2	2	1227	4•00

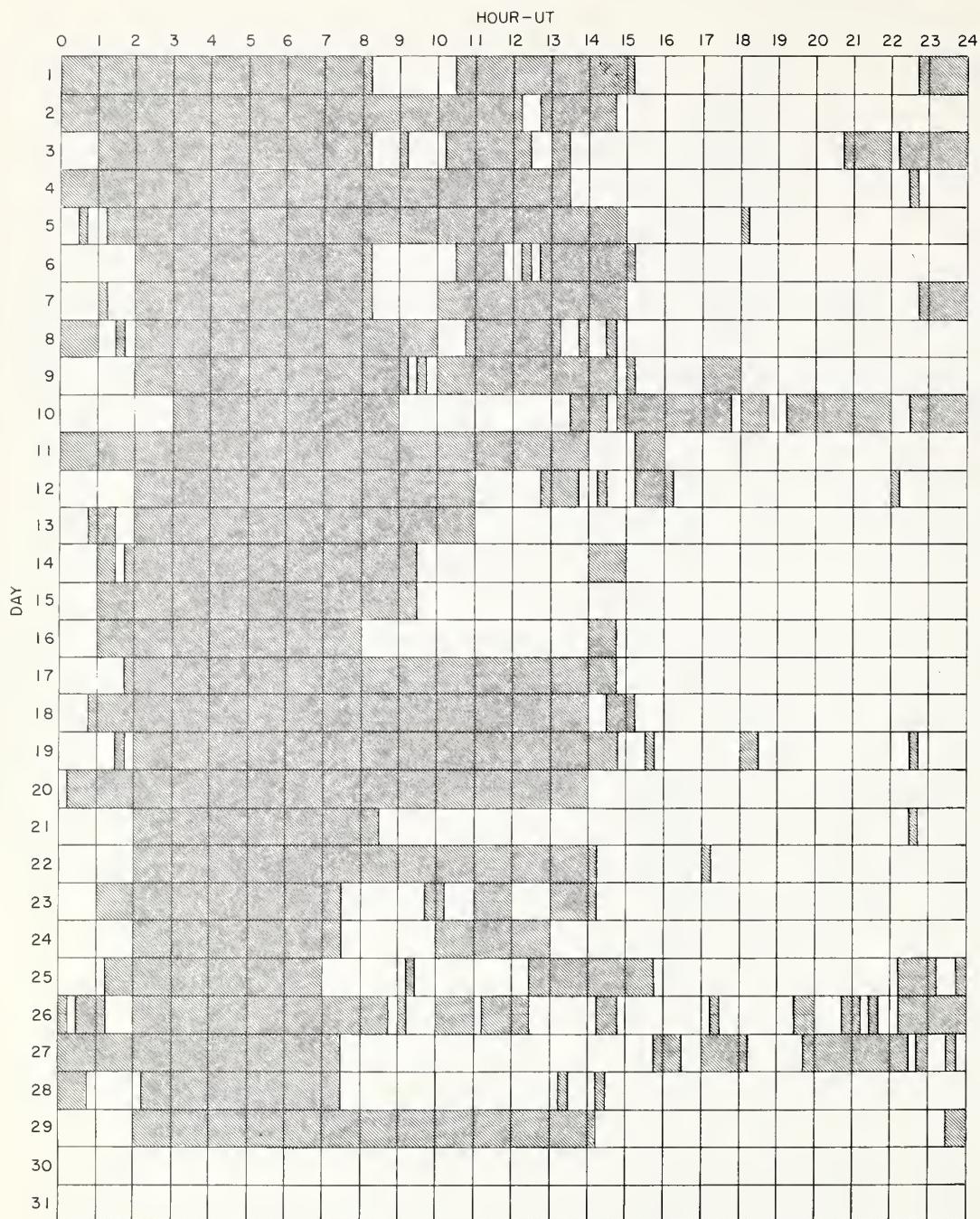
SOLAR FLARES

FEBRUARY 1960

IIIb

OBSERVATORY	DATE FEB 1960	OBSERVED TIME		MAX. PHASE	LOCATION	APPROX. LAT. MGR. DIST.	MEATH PLACE REGION	DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS			PROVISONAL IONOSPHERIC EFFECT	
		START	END								MEAS.	CORR. AREA Sq. Deg.	MAX. WIDTH Hs		
{ WENDEL ARCETRI WENDEL HUANCAYO	08	1020	E	1058	D	S18	W22	5562	38 D	1	1	4•00	3•90	2•60	
WENDEL	08	1021	E	1028	D	S19	W24	5562	7 D	1	3•50	3•00			
WENDEL	08	1247	E	1313	D	S27	E83	5572	26 D	1	1604	1•20			
WENDEL	08	1602	E	1624	D	S15	W26	5562	22 D	1					
HAWAII	09	0028		0200	D	0028	S17	W35	5562	92 D	1	3	0128		
WENDEL	09	1039		1122		S14	W45	5562	43	1+					
WENDEL	09	1140	E	1158	D	S19	W38	5562	18 D	1					
WENDEL	09	1332		1359	D	N02	W21	5563	27 D	1					
WENDEL	09	1443	E	1510	D	S13	W46	5562	27 D	1					
WENDEL	09	1947	E	2026	D	2004	S14	W42	5562	39 D	1	2	2004	4•60	
HUANCAYO	09	2150		2159		S25	E75	5572	9	1	2	1652	1•20	5•00	
WENDEL	10	0832		0853		N18	E20	5566	21	1					
WENDEL	10	1115	E	1127	D	S12	W56	5562	12 D	1					
WENDEL	10	1517	E	1533	D	S14	W57	5562	16 D	1					
HAWAII	13	1940	E	1946		N15	E08	5570	6 D	1	2	1940	1•20		
{ SAC PEAK LOCKHEED HAWAII	13	2002		2022		N09	E46	5574	20	1	1		3•53		
LOCKHEED	13	2002		2050		N10	E45	5574	48	1	2	2007	2•50		
HAWAII	13	2006	E	2028		N13	E45	5574	22 D	1	2	2014	1•40		
WENDEL	14	1119	E	1148		N11	E12	5570	29 D	1					
WENDEL	14	1218		1237		N14	E41	5574	19	1					
WENDEL	14	1357	E	1417	D	N12	E10	5570	20 D	1					
LOCKHEED	14	1746		1815		S24	E07	5572	29	1	2	1751	1•90		
HAWAII	15	2248	E	2306		S26	W10	5572	18 D	1	1	2300	1•60		
HAWAII	17	2112		2200		N10	W02	5574	48	1+	3	2118	3•70		
HAWAII	19	2104		2150		N12	W63	5570	46	1	2	2110	2•00		
LOCKHEED	19	2104		2150		N12	W63	5570	46	1	2	2122	2•00		
WENDEL	21	1354	E	1413	D	N17	W70	5570	19 D	1					
WENDEL	21	1421	E	1435	D	S18	E46	5580	14 D	1					
{ LOCKHEED LOCKHEED	22	1424	E	1517	D	N08	E42	5581	53 D	2+	1	1428	7•89		
{ SAC PEAK	22	1429		1520		N07	E41	5581	51	2	2				
ARCETRI	24	0854	E	0908	D	S20	E05	5580	14 D	1	2				
WENDEL	24	1440	E	1458	D	N06	E16	5581	18 D	1					
WENDEL	24	1511	E	1523	D	N10	E17	5581	12 D	1					
MEUDON	25	0704		0800		S18	W05	5580	56	2+					
HAWAII	26	0122		0138		N13	E15	5584	16	1	3	0128	1•80		
ARCETRI	26	0855	E	0858	D	S10	E75	5587	3 D	1	1				
HAWAII	26	2130	E	2202	D	N11	E14	5584	32 D	2+	2	2130	2•90		
MEUDON	27	1116		1215		S20	W35	5580	59	1					
WENDEL	28	1019		1043	D	N12	W07	5584	24 D	1					
															3•00

INTERVALS OF NO FLARE PATROL OBSERVATIONS
FEBRUARY 1960



Stations include:

Arcetri	Hawaii	Lockheed	Meudon
Dunsink	Huancayo	McMath	Sacramento Peak

COMMERCE - STANDARDS - BOULDER

SUBFLARES
Noted as follows: Date - Universal Time - Coordinates
JANUARY 1960

MCMATH	01	1607	S24 E90	LOCKHEED	06	2030	N07 W66	* LOCKHEEO	17	0030	N09 E66
MCMATH	01	1618	S26 E90	LOCKHEED	06	2135	N26 E08	WENDEL	17	0921	E N27 E58
MCMATH	01	1623	N13 W73	LOCKHEED	06	2140	N07 W64	WENDEL	17	1119	E N31 E57
LOCKHEEO	01	1635 U	N12 W76	LOCKHEED	06	2203	S17 E48	SAC PEAK	18	1726	N16 E59
LOCKHEEO	01	1700	N12 W76	SAC PEAK	06	2204	S18 E49	SAC PEAK	18	1818	N16 E59
HCMATH	01	1701	N12 W75	LOCKHEED	06	2208	S18 E48	SAC PEAK	18	1938	N04 E05
LOCKHEEO	01	1718	S24 E90	LOCKHEED	06	2245	N08 W66	HAWAII	18	1940	N06 E04
HCMATH	01	1710	S25 E90	LOCKHEED	06	2300	S17 E49	SAC PEAK	18	2200	N14 E56
LOCKHEEO	01	1738	S23 E90	HAWAII	06	2300	S19 E51	SAC PEAK	19	2016	N29 E25
LOCKHEEO	01	1738	S23 E90	SAC PEAK	06	1624	N07 W80	HAWAII	19	0028	E N09 W26
LOCKHEEO	01	1804	N09 E36	LOCKHEED	07	0005	N07 W65	WENDEL	19	1136	E N17 E46
LOCKHEEO	01	1811	N15 W75	SAC PEAK	07	0950	E N08 W71	WENDEL	19	1252	E N17 E49
LOCKHEEO	01	1833	S23 E90	* SAC PEAK	07	1516	N08 W80	SAC PEAK	19	1834	N24 E18
LOCKHEEO	01	1851	S23 E90	* LOCKHEED	07	1534	E N07 W80	HAWAII	18	1940	N06 E04
MCMATH	01	1910	N22 E76	LOCKHEED	07	1619	N07 W80	SAC PEAK	19	1842	N09 E27
MCMATH	01	1911	S25 E90	SAC PEAK	07	1624	N07 W80	LOCKHEEO	19	2016	N29 E25
LOCKHEEO	01	1915	S25 E90	LOCKHEED	07	1703	N15 W27	SAC PEAK	20	0801	E N09 W56
MCMATH	01	1927	N15 W78	SAC PEAK	07	1710	S18 E37	WENOEL	20	0828	E N09 W56
LOCKHEEO	01	1937	N10 E80	LOCKHEED	07	1711	S17 E38	WENOEL	20	0856	E N09 W56
LOCKHEEO	01	1945	S23 E90	LOCKHEED	07	1710	S17 E38	WENOEL	20	0927	E N07 W55
LOCKHEEO	01	1945	S23 E90	LOCKHEED	07	1720	S16 W12	WENOEL	20	1159	E S14 W55
LOCKHEEO	01	1946	S23 E90	LOCKHEED	07	1720	S16 W12	WENOEL	20	1251	E S14 W51
LOCKHEEO	01	1946	N11 W71	LOCKHEED	07	1808	N07 W80	WENOEL	20	1350	E N07 E76
LOCKHEEO	01	2038	N15 W77	LOCKHEED	07	1839	N06 W50	SAC PEAK	20	1714	N17 W03
LOCKHEEO	01	2114	S23 E90	LOCKHEED	07	1908	N08 W86	SAC PEAK	20	1748	N17 W03
LOCKHEEO	01	2148	S23 E90	LOCKHEED	07	1908	N08 W86	LOCKHEEO	20	1748	N17 W04
LOCKHEEO	01	2148	S23 E90	SAC PEAK	07	1910	N08 W85	LOCKHEEO	20	1802	N17 W04
LOCKHEEO	01	2224	N17 E77	LOCKHEED	07	1912	N08 W86	LOCKHEEO	20	1933	N13 E24
LOCKHEEO	01	2256	S23 E90	LOCKHEED	07	1954	S17 W13	SAC PEAK	20	1936	N12 E27
LOCKHEEO	01	2323	S23 E90	LOCKHEED	07	2007	S18 E36	LOCKHEEO	20	2004	N13 E24
LOCKHEEO	01	2341	N15 W85	SAC PEAK	07	2012	S17 E26	SAC PEAK	20	2020	N12 E27
WENDEL	02	1037	E S18 E50	LOCKHEED	07	2012	S17 E25	LOCKHEEO	20	2040	N12 E26
WENDEL	02	1308	S12 E55	LOCKHEED	07	2012	N08 W90	SAC PEAK	20	2146	N18 W06
LOCKHEEO	02	1732	S19 E57	SAC PEAK	07	2016	N08 W80	* LOCKHEEO	20	2259	N12 E25
LOCKHEEO	02	1811	S17 E90	LOCKHEED	07	2022	N08 W86	SAC PEAK	21	1552	N28 E20
SAC PEAK	02	1836	S24 E90	LOCKHEED	07	2044	N08 W86	SAC PEAK	21	1604	N19 E88
LOCKHEEO	02	1836	S16 E90	LOCKHEED	07	2057	S18 E35	SAC PEAK	21	1700	N17 W31
LOCKHEEO	02	1845	S17 E90	SAC PEAK	07	2111	N07 W85	SAC PEAK	21	2150	N08 E70
LOCKHEEO	02	1845	S17 E90	LOCKHEED	07	2116	E N08 W90	HAWAII	22	2214	N12 W05
LOCKHEEO	02	1858	N11 W90	SAC PEAK	07	2132	N14 W87	SAC PEAK	22	2214	N12 W05
LOCKHEEO	02	1915	S23 E90	LOCKHEED	07	2153	S15 W16	SAC PEAK	22	1848	N08 E90
LOCKHEEO	02	1955	S17 E90	SAC PEAK	07	2156	S16 W14	SAC PEAK	22	1950	N08 E90
LOCKHEEO	02	1955	S17 E90	LOCKHEED	07	2159	S16 W14	SAC PEAK	22	2020	N10 W04
LOCKHEEO	02	2004	N11 E39	LOCKHEED	07	2325	N08 W86	SAC PEAK	22	2210	N10 W04
LOCKHEEO	02	2004	N11 E39	HAWAII	07	2356	E N08 W90	HAWAII	22	2214	N12 W05
LOCKHEEO	02	2030	S02 E85	SAC PEAK	07	2356	E N08 W90	SAC PEAK	23	1518	U N27 W22
LOCKHEEO	02	2048	S24 E88	HAWAII	08	0056	S20 W17	LOCKHEEO	23	1810	U N14 W64
LOCKHEEO	02	2115	S17 E90	LOCKHEED	08	1705	N09 W90	LOCKHEEO	23	1815	U N10 E48
LOCKHEEO	02	2152	N02 W95	LOCKHEED	08	1705	S18 E13	LOCKHEEO	23	1843	N10 E80
LOCKHEEO	02	2152	N20 W90	SAC PEAK	08	1720	N05 W90	LOCKHEEO	23	1852	U N09 E49
LOCKHEEO	02	2310	E S17 E90	LOCKHEED	08	1727	S22 W02	LOCKHEEO	23	1856	N10 E48
HAWAII	03	0132	S24 E83	LOCKHEED	08	1735	S20 E23	LOCKHEEO	23	1904	N02 E70
CAPRI S	03	1059	E S02 E71	SAC PEAK	08	1742	S26 W32	LOCKHEEO	23	1914	U N10 E55
LOCKHEEO	04	1620	S24 E61	* SAC PEAK	08	1742	S26 W35	LOCKHEEO	23	1948	N10 E80
LOCKHEEO	04	1630	N08 W34	LOCKHEED	08	1953	S15 E13	LOCKHEEO	23	2009	N09 W67
LOCKHEEO	04	1630	N08 W34	SAC PEAK	08	2003	N09 W39	* LOCKHEEO	23	2029	N09 E46
LOCKHEEO	04	1645	N09 W35	LOCKHEED	08	2210	N24 E56	* SAC PEAK	23	2038	U N08 E47
LOCKHEEO	04	1825	N09 W35	SAC PEAK	09	1652	N09 W80	SAC PEAK	23	2112	N09 W67
LOCKHEEO	04	1850	S14 E73	* HAWAII	09	2108	N22 E19	LOCKHEEO	23	2112	N09 W67
LOCKHEEO	04	1915	N09 W35	SAC PEAK	10	1616	N22 E19	LOCKHEEO	23	2202	N06 E71
* LOCKHEEO	04	1938	N08 W37	WENDEL	11	0937	E S06 E70	LOCKHEEO	23	2202	N06 E71
* MCMATH	04	1950	N08 W37	WENDEL	11	1335	E N21 E01	SAC PEAK	23	2300	N07 E80
LOCKHEEO	04	1951	S19 E72	LOCKHEED	11	1305	E N24 E13	LOCKHEEO	23	1909	N13 E32
LOCKHEEO	04	2016	S19 E72	LOCKHEED	11	1729	U N01 W38	SAC PEAK	24	1444	E N19 E39
LOCKHEEO	04	2017	N12 E11	LOCKHEED	11	1730	S19 E70	LOCKHEEO	24	1745	N08 E34
LOCKHEEO	04	2031	S16 E26	LOCKHEED	11	1734	S19 E70	LOCKHEEO	24	1902	N10 E48
LOCKHEEO	04	2104	S14 E66	LOCKHEED	11	1744	S22 W01	SAC PEAK	24	1948	N10 E80
HAWAII	04	2116	N03 W38	LOCKHEED	11	2143	S13 E16	LOCKHEEO	24	2009	N13 E32
LOCKHEEO	04	2148	S17 E73	LOCKHEED	11	2150	U S11 W90	SAC PEAK	24	2009	N13 E32
LOCKHEEO	04	2208	S14 E73	LOCKHEED	11	2216	N17 W09	LOCKHEEO	24	2017	N11 W82
LOCKHEEO	04	2240	N11 E09	HAWAII	11	2220	N18 W09	LOCKHEEO	24	2043	N09 E33
LOCKHEEO	04	2313	S02 E54	* HAWAII	11	2349	E N18 W08	LOCKHEEO	24	2050	N07 E54
LOCKHEEO	04	2317	N10 W35	LOCKHEED	12	1852	N21 W10	LOCKHEEO	24	1923	N09 E34
LOCKHEEO	04	2342	N26 E03	LOCKHEED	12	2005	N10 W03	LOCKHEEO	24	1930	N11 W82
ARCTERI	05	0847	E N06 W46	LOCKHEED	12	2042	S25 W53	SAC PEAK	24	1954	N13 E32
ARCTERI	05	0849	E N06 W46	LOCKHEED	12	2042	S25 W53	SAC PEAK	24	1954	N13 E32
ARCTERI	05	0909	E N04 W45	SAC PEAK	12	2124	S18 W90	SAC PEAK	24	1954	N13 E32
ARCTERI	05	0918	E N33 E41	LOCKHEED	12	2150	E N25 W53	LOCKHEEO	24	2017	N11 W82
WENOEL	05	1016	E S12 E58	SAC PEAK	12	2152	S24 W10	HAWAII	24	2036	E N07 W90
WENOEL	05	1024	S14 E66	LOCKHEED	12	2154	S10 W11	LOCKHEEO	24	2043	N09 E33
WENOEL	05	1025	S12 E66	LOCKHEED	12	2159	N07 E90	LOCKHEEO	24	2057	N07 E57
WENDEL	05	1126	E N04 W66	SAC PEAK	12	2210	N06 E90	LOCKHEEO	24	2050	N07 E54
WENDEL	05	1228	E S10 E61	LOCKHEED	12	2231	N07 E90	HAWAII	24	2054	N07 E50
WENDEL	05	1247	E N08 W17	LOCKHEED	12	2330	U S22 W33	SAC PEAK	24	2056	N07 E65
CAPRI S	05	1424	E N07 W17	LOCKHEEO	13	1628	S23 W41	LOCKHEEO	24	2103	N09 W82
MCMATH	05	1523	S12 E66	LOCKHEEO	13	1645	S11 W07	LOCKHEEO	24	2113	S17 E12
HUANCAYO	05	1533	E N08 W42	LOCKHEEO	13	1732	S18 W75	SAC PEAK	24	2119	N13 E39
HUANCAYO	05	1620	E N08 W42	LOCKHEEO	13	1754	S03 E36	LOCKHEEO	24	2124	N07 E63
LOCKHEEO	05	1623	E N07 W47	LOCKHEEO	13	1756	S22 W42	LOCKHEEO	24	2155	N12 E63
LOCKHEEO	05	1645	N07 W47	LOCKHEEO	13	1756	S22 W42	HAWAII	24	2200	N04 E67
LOCKHEEO	05	1725	S13 E58	LOCKHEEO	13	1756	S18 W76	LOCKHEEO	24	2208	N13 W34
LOCKHEEO	05	1754	N15 W60	LOCKHEEO	13	1828	S23 W41	LOCKHEEO	24	2209	N10 W34
LOCKHEEO	05	1754	N15 W68	LOCKHEEO	13	1847	S17 W90	SAC PEAK	24	2216	N07 E62
LOCKHEEO	05	1816	N10 W60	LOCKHEEO	13	1905	S47 W50	LOCKHEEO	24	2233	N06 E59
LOCKHEEO	05	1820	N08 W50	LOCKHEEO	13	1908	S18 W75	SAC PEAK	25	1604	E N06 E44
LOCKHEEO	05	1844	S16 E60	LOCKHEEO	13	1925	S16 E49	SAC PEAK	25	2112	N12 E15
LOCKHEEO	05	1900	S02 E42	LOCKHEEO	13	2054	S21 W52	HAWAII	25	2118	N12 E51
HAWAII	05	2000	E S13 E33	LOCKHEEO	13	2147	S10 E29	HAWAII	25	2120	N09 E14
HAWAII	05	2112	S17 E13	LOCKHEEO	13	2147	S10 E29	SAC PEAK	25	2121	N09 E90
LOCKHEEO	05	2148	N12 W04	LOCKHEEO	13	2158	E N02 W47	SAC PEAK	25	2120	N10 E13
LOCKHEEO	05	2151	N26 E23	LOCKHEEO	13	2187	E N02 W47	SAC PEAK	25	2121	N09 E90
HAWAII	05	2152	N12 W02	LOCKHEEO	13	2048	S13 W37	SAC PEAK	25	1615	N08 E32
LOCKHEEO	05	2232	N26 E20	SAC PEAK	14	0826	E N21 W34	SAC PEAK	25	1522	E N08 E86
HAWAII	05	2238	N31 E16	SAC PEAK	14	1830	S22 W57	SAC PEAK	25	1640	N06 E33
HAWAII	05	2340	E N07 W54	* LOCKHEEO	15	1549	E S21 W69	SAC PEAK	25	1722	S16 E68
LOCKHEEO	05	2357	N22 W54	* LOCKHEEO	15	1646	S06 E09	SAC PEAK	25	1812	N06 E38
HAWAII	05	2357	N22 W54	* LOCKHEEO	15	1728	E N10 E80	SAC PEAK	25	1920	N20 E13
LOCKHEEO	05	2357	N22 W54	* LOCKHEEO	15	1812	N24 W47	SAC PEAK	25	2010	N11 E12
LOCKHEEO	06	0004	N06 W53	LOCKHEEO	15	1812	N24 W47	HUANCAYO	27	1415	N08 E32
HAWAII	06	0006	N07 W57	LOCKHEEO	15	1812	N24 W47	LOCKHEEO	27	1514	N10 E70
CAPRI S	06	1223	S26 E08	LOCKHEEO	15	1827	E N02 W47	LOCKHEEO	27	1744	N06 E28
LOCKHEEO	06	1620	N06 W59	LOCKHEEO	15	1827	E N02 W47	LOCKHEEO	27	1740	U N13 E62

SUBFLARES

Noted as follows: Date - Universal Time - Coordinates

JANUARY 1960

LOCKHEED	27	2327	N22 W03	LOCKHEED	29	1815	N08 E36	LOCKHEED	30	2106	N11 W28
LOCKHEED	28	0019	N08 E27	LOCKHEED	29	1820	S14 E24	LOCKHEED	30	2119	N13 W08
LOCKHEED	28	0043	N10 E22	* LOCKHEED	29	1820	S18 E57	SAC PEAK	30	2120	N12 W07
CAPRI S	28	1852	E N10 E19	LOCKHEED	29	1942	U S18 E57	LOCKHEED	30	2127	N13 W90
HUANCAYD	28	1855	N12 E11	LOCKHEED	29	1942	U S18 E57	SAC PEAK	30	2142	N13 E28
SAC PEAK	28	1856	N12 E10	SAC PEAK	29	1942	S18 E56	LOCKHEED	30	2143	N07 W07
LOCKHEED	28	1639	N12 E10	HUANCAYD	29	1957	E N18 E59	LOCKHEED	30	2143	N23 E32
SAC PEAK	28	1640	N18 W11	LOCKHEED	29	2015	N22 E48	SAC PEAK	30	2148	N12 W08
HUANCAYD	28	1651	E N17 W08	SAC PEAK	29	2044	N09 E11	LOCKHEED	30	2149	N13 W08
SAC PEAK	28	1852	E N17 W08	LOCKHEED	29	2050	N18 E11	LOCKHEED	30	2202	S14 E12
SAC PEAK	28	1853	E N17 W08	LOCKHEED	29	2050	N07 E47	LOCKHEED	30	2202	N09 W07
SAC PEAK	28	1804	N33 W90	LOCKHEED	29	2157	S14 E21	LOCKHEED	30	2236	N23 E30
SAC PEAK	28	1904	S15 E37	LOCKHEED	29	2159	S18 E54	LOCKHEEO	30	2300	N10 W30
LOCKHEED	28	1905	S14 E37	LOCKHEED	29	2206	N10 E41	LOCKHEED	30	2315	N22 E34
LOCKHEED	28	1910	N13 E07	SAC PEAK	29	2206	N09 E42	LOCKHEED	30	2343	N23 E30
SAC PEAK	28	1912	N12 E07	HAWAII	29	2210	E N12 E42	LOCKHEEO	30	2352	S17 E90
SAC PEAK	28	1913	N12 E40								
LOCKHEED	28	1933	S10 E48	WENDEL	30	1127	E N08 E25	LOCKHEEO	31	0003	N22 E29
LOCKHEED	28	2034	S01 W06	WENDEL	30	1128	E N08 W15	LOCKHEED	31	0039	N10 E26
* LOCKHEED	28	2034	S01 W06	WENDEL	30	1128	E N08 W11	CAPRI S	31	1042	E N12 E24
* LOCKHEED	28	2049	N07 E01	WENDEL	30	1134	E N15 W02	CAPRI S	31	1312	E N08 F17
HUANCAYD	28	2049	N07 E01	* SAC PEAK	30	1658	E N10 E34	LOCKHEEO	31	1701	N07 W07
SAC PEAK	28	2056	N23 E21	SAC PEAK	30	1658	E N21 E38	LOCKHEED	31	1824	S16 F04
LOCKHEEO	29	1639	N09 E37	LOCKHEEO	30	1700	E N21 E38	LOCKHEED	31	1846	N11 F17
LOCKHEED	29	1639	N09 E37	LOCKHEED	30	1710	N08 W27	LOCKHEED	31	1900	S17 W01
SAC PEAK	29	1650	N07 W38	LOCKHEED	30	1724	N11 W02	LOCKHEED	31	1945	N09 W41
LOCKHEED	29	1651	N07 W38	LOCKHEED	30	1800	E N10 E90	LOCKHEEO	31	1949	N08 E11
LOCKHEED	29	1701	S10 E57	LOCKHEED	30	1850	N11 E93	LOCKHEEO	31	2059	S16 E10
SAC PEAK	29	1702	S19 E58	SAC PEAK	30	1944	S18 E45	LOCKHEED	31	2117	N22 E24
LOCKHEED	29	1737	N12 E00	LOCKHEEO	30	2000	S18 E90	LOCKHEED	31	2122	N09 W42
SAC PEAK	29	1740	N11 E00	SAC PEAK	30	2006	S18 E90	SAC PEAK	31	2214	S18 W02
* SAC PEAK	29	1740	N04 W17	LOCKHEED	30	2035	S18 E90	LOCKHEED	31	2215	S17 W04
LOCKHEED	29	1745	N13 E09	LOCKHEEO	30	2047	N12 W10	LOCKHEED	31	2235	N09 W42
LOCKHEED	29	1745	N13 E09	SAC PEAK	30	2054	E N11 W09	SAC PEAK	31	2238	N09 W43

*Rated as flare of importance 2 or 3 by other observatories (See CRPL-F 186 Part B).

COMPARISON - STANDARDS - HOLDERS

SOLAR FLARES

NOVEMBER 1959

OBSERVATORY	DATE NOV 1959	OBSERVED UNIVERSAL TIME		LOCATION	APHELION	LAT.	MAX. PHASE	DURA- TION — MINUTES	IM- POR- TANCE	MEASUREMENTS			PROVISIONAL IONOSPHERIC EFFECT	
		START	END							MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH H _e		
GOOD HOPE	02	1010	1030	1013	N23 E47	5446	20	1	1	1013	2•40	3•70		
GOOD HOPE	02	1314	1330	1317	N23 E43	5446	16	1	1	1317	1•60	2•30		
VOROSHILOV	03	0237	0254		N23 E35	5446	17	1	1	0247	2•17	4•51		
SYDNEY	03	0311	0320	0315	N23 W82	5437	9	2	1	0315	1•50	6•00	68	
SIMEIZ	03	0825	E	0832 D	N13 W65	5439	7	D	1	0826	•90	1•90		
SIMEIZ	03	0838	E	0838 D	N27 E34	5446		1	1	0838	1•82	2•40		
CAPRI G	03	1052	F	1057 D	N18 W26	5441	5	D	1	1055	1•80	3•00		
GOOD HOPE	03	1115	1135	1118	N13 E30	5446	20	1	2	1358	2•10	4•00		
CAPRI G	03	1356	E	1400 D	N13 W60	5439	4	D	1	2	1352	2•53	6•87	62
VOROSHILOV	03	2250		2302	N16 W70	5439	22	1+	3	2302				
TASHKENT	04	0606	0630	0609	N27 E15	5446	24	1	1	0613	3•00	3•00		
GOOD HOPE	04	1010	1024	1012	N13 W76	5439	14	1	1	1012	1•20	80		
{ GOOD HOPE	04	1148	1219	1156	N13 W82	5439	31		2	1156	2•10			
CAPRI G	04	1159	E	1213	N13 W80	5439	14	D	1	3	1201	5•00		
{ GOOD HOPE	04	1322		1349	N12 W84	5439	27	1	2	1334	1•60			
CAPRI G	04	1334	E	1352 D	N12 W80	5439	18	D	2	3	1335	9•00		
SYDNFY	04	2243		2254	S17 E88	5452	11		2	2250	1•50			
SYDNEY	05	0055	0102	0059	S17 E87	5452	7		2	0059	1•00			
SYDNEY	05	0149	0200	0157	S17 E86	5452	11		2	0157	•25			
LOCKHEED	05	1655	E	1830	N26 E03	5446	95	1	2	1735	2•60			
LOCKHEED	05	2015		2030	N26 E03	5446	35	1	2	2030	2•00			
VOROSHILOV	06	0130		0224	0139	W00	5446	54	2	1	0139	7•59		
ATHENS	06	0714	E	0725	S17 E70	5452	11	D	1+	3	1•70	8•10		
LOCKHEED	06	1611		1720	1618	N26 W09	5446	69	1	2	1618	2•60		
LOCKHEED	06	1740		1844	S20 E61	5452	64	1	1	1752	2•00			
VOROSHILOV	07	0241		0302	0255	S18 E57	5452	21	1	1	0255	1•71	3•23	
{ ABASTUMANI	07	0741	E	0829 D	0743	W16	5446	48	D	2	2•53	2•90		
LOCKHEED	07	0756	E	0829 D	0803	N24 W22	5446	33	D	2	3•18	3•60		
LOCKHEED	07	1614	E	1850	S17 E50	5452	156	D	1	2	1734	2•10		
SYDNEY	07	1912		2055	1945	S17 E50	5452	103	1	2	1945	2•00		
LOCKHEED	07	2248		2254	S20 E83	5457	6	1	2	2250	•75	3•00		
SYDNEY	07	2310		2410	S17 E50	5452	60	1	1	2345	2•00			
LOCKHEED	08	0308		0428	S20 E34	5452	80	1	2	0254	2•00	3•00		
KRASNAYA	08	2344		2410	S17 E29	5452	26	1	1	2354	2•00			
CAPRI G	09	0900		0910	0902	N22 W90	5441	10	1+	2	0902	•90	4•50	
CAPRI G	09	1158	E	1212 D	S16 E51	5454	14	D	2	3	1206	7•00		
CAPRI G	09	1243	E	1310 D	S19 E21	5452	27	D	2	3	1247	8•00		
VOROSHILOV	10	0046		0056	S18 E18	5452	10	1	2	0052	1•90	2•12	63	
NEDERHORST	10	1104	E	1117 D	S23 E11	5452	13	D	2	3	1122			
CAPRI G	10	1118	E	1152 D	S18 E11	5452	34	D	2	3	1231			
CAPRI G	10	1226	E	1305 D	S17 E10	5452	39	D	1	2	1640	3•00		
LOCKHEED	10	1635		1721	1640	S16 E06	5452	46	1	2	1904	4•80		
LOCKHEED	10	1820		2015	1904	S16 E06	5452	115	2	2	2350	2•20		
LOCKHEED	10	2324		2433 D	2350	S16 E02	5452	69	D	1	1	40		
VOROSHILOV	11	0100		0109	S17 E06	5452	11	1+	1	0109	3•79	4•04	80	

SOLAR FLARES

NOVEMBER 1959

OBSERVATORY	DATE NOV 1959	OBSERVED UNIVERSAL TIME		MAX. PHASE	LOCATION	DURA- TION MINUTES	IM- POR- TANCE	ONS. COND.	TIME — UT	MEASUREMENTS			PROVISIONAL IONOSPHERIC EFFECT
		START	END							MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %
KRASTNA KRASNAYA LOCKHEED	11 0851 11 0921 11 2037	0912 0929 2130	0854 0925 2045	S18 W04 N09 E74 S14 E20	S18 W04 N09 E74 S14 E20	5452 5438 5454	21 8 53	1 1 2	2 2 3	0854 0925 2045	•90 •90 •20	•50 •50 2•30	80 85 30
GOOD HOPE KRASNAYA CAPRI G VOROSHILOV	12 0717 E 12 0845 12 1422 E 12 2303	0755 0916 1442 D 2353	0721 0850 2304	S15 W13 S24 W15 S17 E01 S16 W22	S15 W13 S24 W15 S17 E01 S16 W22	5452 5452 5454 5452	38 D 31 D 20 D 50	1 1 1 1	2 2 2 2	0721 0850 1424 2304	2•30 2•72 1•46 3•07	2•50 1•46 4•00 3•52	85
VOROSHILOV KRASNAYA KRASNAYA	13 0010 13 0821 13 0924	0037 0844 1017	0012 0834 0944	S14 W04 S13 W27 S16 W11	S14 W04 S13 W27 S16 W11	5454 5452 5454	27 1+ 23	1+ 1 1	2 2 2	0012 0844 0944	2•89 5•44 4•53	3•05 3•20 2•40	80 80 60
VOROSHILOV VOROSHILOV { KRASNAYA { CAPRI G { CAPRI G { GOOD HOPE CAPRI G CAPRI G	14 0151 14 0203 14 0737 E 14 0823 E 14 1219 E 14 1219 14 1335 E 14 1431 E	0234 0258 0745 0915 D 1231 D 1234 1352 D 1452 D	0158 0212 0848 0910 1221 1221 1352 D 1452 D	S19 W47 S18 W34 S16 W03 S11 W23 S16 W38 S17 W38 S20 W25 S18 W43	S19 W47 S18 W34 S16 W03 S11 W23 S16 W38 S17 W38 S20 W25 S18 W43	5452 5452 5457 5452 5452 5452 5454 5452	43 43 8 D 43 D 12 D 15 D 17 D 21 D	1+ 1 1 1 1 1 1 1	2 2 2 3 3 3 3 2	0158 0738 0848 0844 1221 1221 1337 1432	4•34 1•63 2•07 3•00 1•00 4•00 5•00 3•00	6•70 1•63 2•07 3•00 1•00 4•00 5•00 6•70	69 63 96
{ TASHKENT { GOOD HOPE { ATHENS { GOOD HOPE { TASHKENT GOOD HOPE VOROSHILOV VOROSHILOV	15 0638 15 0700 E 15 0733 15 0733 15 0734 15 0909 15 2256 15 2330 E	0714 0740 0733 0733 0734 0932 2312 2336	0651 0651 0744 0808 0742 0911 2257 N07 E71	S17 W54 S17 W52 S13 W35 S12 W36 S10 W32 S18 W51 S15 W65 N07 E71	S17 W54 S17 W52 S13 W35 S12 W36 S10 W32 S18 W51 S15 W65 N07 E71	5452 5452 5454 5454 5454 5452 5452 5463	36 40 D 2 2 34 23 16 6 D	1 1 2 2 1 1 1 1	2 3 3 2 2 3 3 3	0647 0700 0744 0744 0743 0911 2257 2330	4•13 2•30 7•00 8•70 6•24 0911 1•35 1•27	2•30 4•20 2•30 8•70 6•00 1•60 3•08 3•65	65 63 96
VOROSHILOV TASHKENT GOOD HOPE CAPRI G CAPRI G CAPRI G	16 0015 16 0508 16 0647 E 16 0933 E 16 1025 E 16 1129 E	0120 0546 0652 1020 D 1032 D 1138 D	0043 0515 0652 1020 D 1032 D 1138 D	N14 E49 N07 E75 N18 W63 N03 E05 N14 W66 N07 E70	N14 E49 N07 E75 N18 W63 N03 E05 N14 W66 N07 E70	5461 5463 5463 5458 5458 5464	65 38 1 5 D 47 D 9 D	1+ 1 1 1 1+ 1	2 2 2 1 1 3	0043 0516 0648 0935 1030 1132	5•33 1•84 0•90 •90 4•00 5•00	8•12 6•00 2•10 4•00 4•00 5•00	58 70 70 105 69
VOROSHILOV VOROSHILOV { GOOD HOPE { NEDERHORST CAPRI G CAPRI G GOOD HOPE	17 0111 17 0128 U 17 0925 E 17 0933 17 0938 E 17 1110 E 17 1303 D	0123 0130 01004 0950 D 1003 1230 1313 D	0115 0128 0938 0950 D 1003 1110 E 1309	N03 W02 S20 W90 S17 W52 S16 W55 S16 W50 N18 E90 S18 W88	N03 W02 S20 W90 S17 W52 S16 W55 S16 W50 N18 E90 S18 W88	5458 5452 5454 5454 5454 5466 5452	12 2 U 39 D 17 D 25 D 80 D 10 D	1+ 1+ 1 2 2 1 1	2 2 3 2 3 3 1	0115 0128 0938 0938 0942 1120 1309	2•17 •46 2•10 3•60	2•16 3•09 2•10	80 95
LOCKHEED LOCKHEED	18 1614 18 2322	1631 D 2435 D	1622 2335	N21 W60 N18 W66	N21 W60 N18 W66	5457 5457	17 D 73 D	1 2	1 1	1622 2335	2•40 5•40	20	20
CAPRI G CAPRI G CAPRI G	19 0738 E 19 0804 E 19 0825 E	0805 D 0910 D 0835 D	0805 0910 0835	N31 E02 N17 E81 N26 E85	N31 E02 N17 E81 N26 E85	5460 5468 5468	27 D 66 D 10 D	1 1 1	3 3 3	0700 0805 0825	4•00 4•00 5•00	4•00 4•00 40	Slow S-SWF

SOLAR FLARES

NOVEMBER 1959

OBSERVATORY	DATE NOV 1959	OBSERVED UNIVERSAL TIME		MAX. PHASE	APPROX. LAT. MER. DIST.	LOCATION	DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	TIME — UT	MEASUREMENTS			PROVISONAL IONOSPHERIC EFFECT	
		START	END								MEATH FLAG REGION	CORR. AREA Sq. Deg.	MEAS. AREA Sq. Deg.	MAX. WIDTH H _a	
CAPRI G	19	1046 E	1051 D		N24 E31	5464	5	D	1	2	1048	3.00			
{ KHARKOV CAPRI G	20	1132	1140		N07 E45	5466	8		1	2	1133	1.71	2.60	1.80	
SYDNEY	20	1134 E	1137 D		N04 E43	5466	3	D	1	2	1135	2.00	3.00		
	20	2237 E	2307		S15 E79	5467	30	D	1	3	2243	•50	2.00		
{ VOROSHILOV	21	0014 E	0048	0019	N22 E67	5468	34		1	2	0019	1.00	2.50		63
SYDNEY	21	0014 E	0105	0034	N27 E67	5468	51	D	1	2	0034	2.00	4.00		
	21	2316	2327	2321	N19 E47	5468	11		1	1	2322	2.30			10
{ LOCKHEED	21	2318	2326	2323	N20 E46	5468	8		2	3	2323	3.00	5.00		
SYDNEY	23	0345	0359	0347	N24 E80	5471	14		1	1	0347	•75	3.00	5.00	
{ TASHKENT	23	0654	0713	0659	N26 E86	5471	19		1	3	0659	1.84			
GOOD HOPE	23	0654	0715	0657	N24 E90	5471	21		1	1	0657	•50			
GOOD HOPE	23	0936	1004	0941	N24 E90	5471	28		1	1	0941	•50			
VOROSHILOV	25	0117	0120	0118	N03 E90	5476	3		1	2	0118	•45	3.09		65
GOOD HOPE	25	1135	1212	1142	N11 E78	5476	37	1+		2	1142	2.00			72
{ ATHENS	26	0748	0824		N12 E66	5476	36	2+		5	4.30	9.70			
GOOD HOPE	26	0749 E	0826		N12 E70	5476	37	D	2	2	0750	1.20			
KRASNAYA	26	0827	0835	0831	N10 E71	5476	8	1+		2	0831	1.82	2.50		1.00
{ GOOD HOPE	26	0828	0840	0831	N12 E75	5476	12		1	2	0831	1.00			
GOOD HOPE	26	0923	1110	0938	S15 W18	5467	107		2	2	0938	6.80	7.50		
{ GOOD HOPE	26	0924	1045	0931	S13 W10	5467	81	2+		2	0931	21.76	11.90		155
KRASNAYA	26	0924	1045	0948	S13 W10	5467	81	2+		2	21.76	11.90			130
KHARKOV	26	1010 E	1045 D		S17 W16	5467	35	D	1+	1	1012	6.86	8.00	2.00	
CAPRI G	27	0831 E	0845		N11 E64	5476	14	D	1	3	0832	4.00			70
KRASNAYA	27	0921	0940	0831 U	N11 E68	5476	19		1	2	0831	1.82	2.30		
{ CAPRI G	27	0939 E	1002 D		N04 E61	5476	23	D	1	3	0941		4.00		
CAPRI G	27	1108 E	1155		N11 E63	5476	47	D	1	3	1110		3.00		
{ GOOD HOPE	27	1134 E	1147	1138	N12 E65	5476	13		1	3	1138	1.50			
CAPRI G	27	1144 E	1155		S14 W35	5467	11	D	1	3	1146		3.00		
{ GOOD HOPE	27	1220	1222 D	1233	N19 E30	5471	62	D	2	3	1233	6.10	7.40		
CAPRI G	27	1225 E	1337 D		N18 E35	5471	72		2	3	1231		10.00		
{ CAPRI G	27	1304	1302	1250	N11 E62	5476	39	D	1	3	1227		3.00		
GOOD HOPE	27	1244	1330 E	1337 D	N12 E65	5476	18		1	3	1250	1.50	3.50		
CAPRI G	27	1353 E	1507 D		N09 E47	5476	7	D	1	3	1332		3.00		
{ CAPRI G	27	1342 E	1412 D	1507 D	N11 E61	5476	74	D	1	3	1355	4.00			
CAPRI G	27	1432 E			N19 W20	5468	30	D	1	3	1344	6.00			
					N18 W22	5468	35	D	2	3	1438	9.00			
{ SIMEIZ	28	0732 E	0835 D	0746	N10 E37	5476	63	D	1	1	0747	1.35			
GOOD HOPE	28	0733	0828	0736	N11 E37	5476	55		1	1	0736	•80	1.00		
ATHENS	28	0735 E	0820		N12 E35	5476	45	D	1	4	2.00	2.40			
CAPRI G	28	0946 E	1008 D		S18 W48	5467	22	D	1	2	0948	3.00			
{ GOOD HOPE	28	1213	1335		N12 E37	5476	82		2	2	1224	4.60	5.80		
CAPRI G	28	1235 E	1252 D		N11 E34	5476	17	D	2	1	1236	9.00			
GOOD HOPE	28	1335 E	1340 D	2017	S17 W46	5467	5	D	2	1	1338	4.20	6.20		
LOCKHEED	28	2006	2130		N10 E30	5476	84		3	2	2017	13.00			
LOCKHEED	29	0010	0035 D	0022	N23 E03	5471	25	D	1	1	0222	2.00			20

SOLAR FLARES

NOVEMBER 1959

OBSERVATORY	DATE NOV 1959	OBSERVED UNIVERSAL TIME			MAX. PHASE	LOCATION	IM- M-MATH PLACE	DURA- TION MINUTES	OBS. COND.	TIME — UT	MEASUREMENTS			PROVISIONAL IONOSPHERIC EFFECT	
		START	END	LAT. MER.							Sq. Deg.	Corr. FIRZ	Max. Width H _A	Max. Int. %	
SYDNEY	29	0056	0111	0107	N13 E28	54°76'	15	2	0107	3•00	3•00	4•96	5•64	86	
VOROSHILOV	29	0253	0321	0256	N10 E26	54°76'	28	2	1	0638	2•10	2•40			
GOOD HOPE	29	0634	E	0701	N11 E26	54°76'	27	D	1	0831	3•80	4•20			
{ GOOD HOPE	29	0809	E	0933	N11 E23	54°76'	84	D	1+						
{ ATHENS	29	0820		0900	D	N09 E22	54°76'	40	D	1	0842	2•72	3•20		
SIMEIZ	29	0822	E	0910	D	N09 E20	54°76'	48	D	1	1223	4•10	4•60		
GOOD HOPE	29	1221	E	1238	D	N12 E22	54°76'	17	D	1	1346	6•90	7•40		
GOOD HOPE	29	1335	E	1500	D	N10 E19	54°76'	85	D	2	1839	10•50			
{ CLIMAX	29	1820		1925	D	N09 E16	54°76'	65	D	2	1847	6•50	40		
LOCKHEED	29	1826		2002		N07 E18	54°76'	96	2+	3	1847	6•50			
SIMEIZ	30	0909	E	0923	D	N10 E15	54°76'	14	D	1	0912	2•26	3•20		
GOOD HOPE	30	1111		1150		N10 E07	54°76'	39	2	1117	6•00	6•20			
GOOD HOPE	30	1148		1220		N22 F35	54°77'	32	1	1153	2•00	2•60			
LOCKHEED	30	1604		1655		N10 E10	54°76'	51	1	1611	2•00				
{ LOCKHEED	30	1722		1732		N09 E07	54°76'	88	D	2	1742	12•60			
{ CLIMAX	30	1731	E	1838		N03 E02	54°76'	67	D	3	1742	12•60			
LOCKHEED	30	2053		2145		N13 E13	54°76'	52	1	2100	2•50				

These flare reports are addenda to the November 1959 flares published in CRPL-F 184 Part B, December 1959.

Errata: On page IIIo of CRPL-F 185B, "These flare reports are addenda to the September 1959 flares published in CRPL-F 182B." On page IIlik of CRPL-F 186B, "These flare reports are addenda to the October 1959 flares published in CRPL-F 183B."

CAPRI G ANACAPRI - GERMAN
CAPRI S ANACAPRI - SWEDISH
GOOD HOPE ROYAL OBSERVATORY, CAPE OF GOOD HOPE
KIEV* KIEV UNIVERSITY
KODAIKANAL KODAIKANAL
KRASNAYA PAKHRA KRASNAYA PAKHRA
LOCKHEED LOS ANGELES

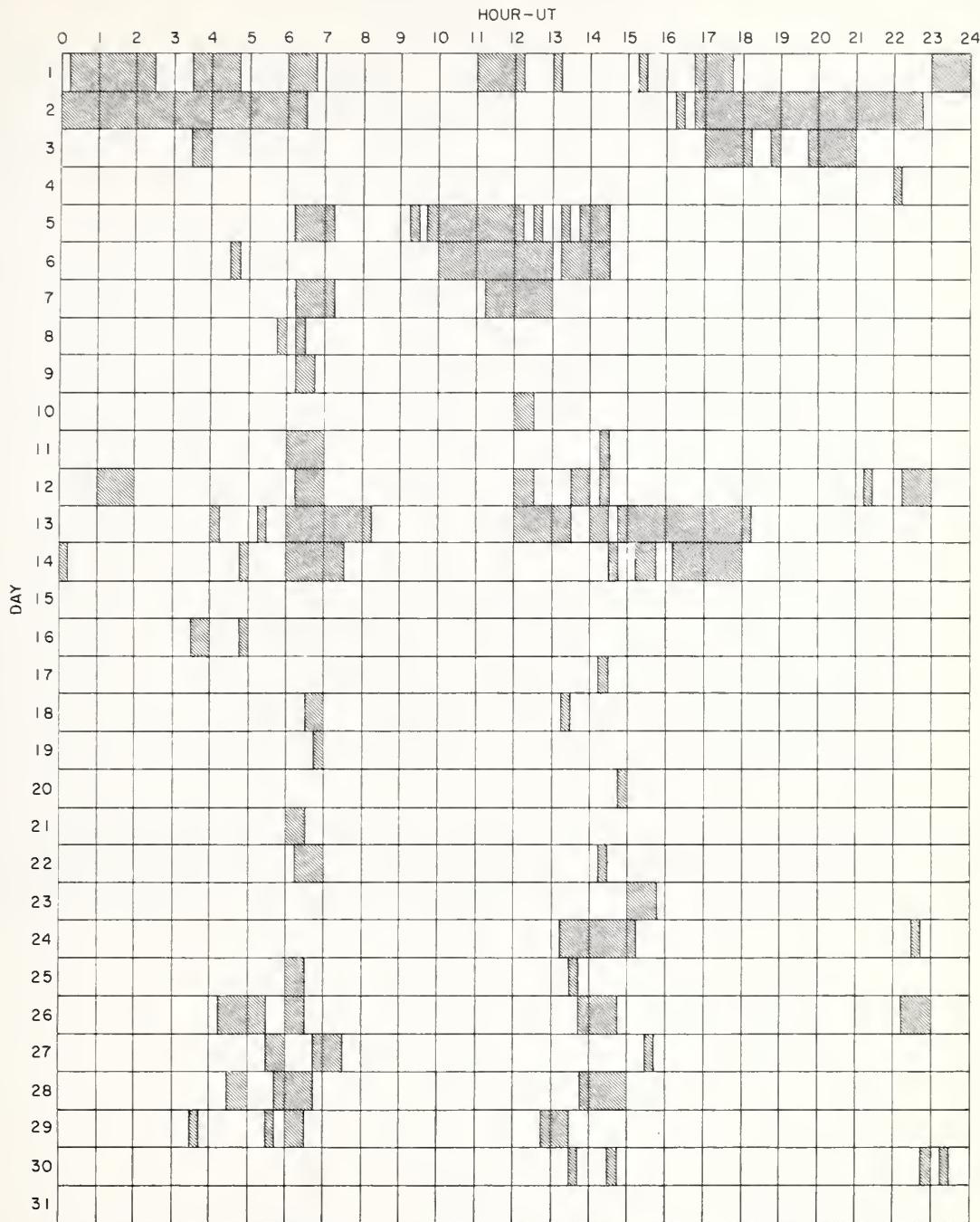
MOSCOW-C MOSCOW - GAISSU
R O EDIN ROYAL OBSERVATORY, EDINBURGH
R O HENST GREENWICH ROYAL OBSERVATORY, HERSTMONCEUX
SAC PEAK SACRAMENTO PEAK
SCHAUTNS SCHAUTNSLAND
USNRL UNITED STATES NAVAL RESEARCH LABORATORY

SAC PEAK: ALL VALUES IN MAX. INT. COLUMN ARE
ARBITRARY UNITS (0-40), NOT PERCENT
OF CONTINUOUS SPECTRUM,
E - LESS THAN & - PLUS
D - GREATER THAN - MINUS
U - APPROXIMATE □ - NOT REPORTED

LOCKHEED OBSERVATIONS: ALL VALUES IN THE MAX-
IMUM INTENSITY COLUMN ARE ARBITRARY UNITS ON A
SCALE OF 10 TO 40 - NOT PERCENT OF THE CONTINUOUS
SPECTRUM.

INTERVALS OF NO FLARE PATROL OBSERVATIONS
NOVEMBER 1959

IIIk



Stations Include:

Abastumani	Huancayo	Meudon	Sacramento Peak
Anacapri (Swedish)	Kharkov	Mitaka	Simeiz
Arcetri	Kiev GAO	Moscow Gaiash	Sydney
Athens	Kodaikanal	Nederhorst	Tashkent
Climax	Krasnaya Pakhra	Nizamiah	Voroshilov
Dunsink	Locarno	Ondrejov	Zurich
Good Hope	Lockheed	Royal Greenwich Observatory	
Hawaii	McMath	Herstmonceux	

COMMERCIAL - STANDARDS - BOULDER

IONOSPHERIC EFFECTS OF SOLAR FLARES

Sudden Cosmic Noise Absorption
 Sudden Enhancements Of Atmospherics
 Solar Noise Bursts At 18 Mc.

OCTOBER 1959

Oct. 1959	CLASS			Wide Spread Index	TIME (UNIVERSAL TIME)			PERCENT ABSORPTION SCNA	OBSERVATION STATIONS
	SCNA	SEA	Burst		BEGIN	MAX.	END		
2			1	3	1748		1752		BO, SP
2			1	5	1752		1758		BO, RE, SP
2			1	3	1839		1841		BO, SP
3			1	1	2246		2249		HA
6		1+		4	0003	0015	0050		A1, A5, A6
6		1+		3	1422		1443		KU, NE
6		1+		3	1730	1746	1815		A1, A2, A3, A5
{ 6	1	1	1	5	2012	2015	2040	30	BO, HA, MC, RE
6			1	1	2015	2025	2050		A6, BO, HA, SP
6					2244		2308		HA
6			1	1	2345		2348		HA
7		1		1	1328		1348		NE
{ 7	1	1+	1	1	1428	1432	1440	30	RE
7		1+		3	1430		1459		NE, PU
8			1	5	2117		2122		HA, RE
9			1	1	0035		0038		HA
18			1	3	1829		1833		BO, SP
20		1+		3	1335	1400D	1430		A1, A5
21		2		3	1145	1201	1225		A1, A5
21		1		3	1235	1240	1300		A1, A5
22		2		3	1200	1215	1235		A1, A3, A5
22		2		3	1240	1250	1330U		A1, A3, A5
22		1+		3	1406	1425			A1, A5
24		2		3	1445	1450			A1, A3
24		2		3	2028	2047	2103		A1, A5
24		2+		3	2103	2125	2147		A1, A5
24		2-		3	2147	2205	2230		A1, A5, A6
26		3		4	1059	1120	1220		A1, A3, A5
26			1	3	2004		2008		BO, SP

NOVEMBER 1959

Nov. 1959	CLASS			Wide Spread Index	TIME (UNIVERSAL TIME)			PERCENT ABSORPTION SCNA	OBSERVATION STATIONS
	SCNA	SEA	Burst		BEGIN	MAX.	END		
1	1			1	1255	1307	1400		MC
3			1	1	1148	1152	1200		RE
3			1	1	1524		1640		RE
3			1	3	1704		1707		BO, SP
{ 4	1	2		5	2045	2100	2200	15	A5, BO, SP
{ 4	1			5	2050	2058	2112		BO, HA, RE
9		2		3	1238		1310		NE, PU
10		2+		5	1106		1141		NE, PA, PU
10		2-		3	1412	1428D	1450		A1, A5
{ 10	1		5	1638	1645	1730	25	BO, RE, SP	
{ 10	1		3	1640	1654	1740			BO, SP
{ 10	1			5	1900	1907	1940	25	BO, MC, SP
{ 10	1			3	1900	1915			BO, SP
12			1	1	1140	1147	1150		RE
13		2+		3	0958	1013	1048		A3, A5
{ 14	1		5	1712	1725	1745	25	A3, A5, BO, SP	
{ 14	1			5	1714	1725			BO, MC, SP
{ 15	1		1	5	1940	1948			A3, A5, BO
{ 15	1			5	1942	1944	1947	10	BO, HA, SP
26		2		3	0931		0943		NE, PU
28		2		1	1223		1323		NE
{ 28	2		5	2014	2021	2105	40	BO, HA, MC, RE, SP	
{ 28	2		2+	5	2015	2030	2115		A1, A3, A5, BO, SP
29		2+		5	1348	1407	1450		A3, A5, NE
{ 29	2		3	5	1835	1857	2035		A1, A3, A5, A6, BO, SP
{ 29	2			5	1843	1857	1950	50	BO, HA, MC, RE, SP
30		2		1	1115				NE
{ 30	3	3-	5	1726	1745	1915	100	A1, A2, A3, A5, BO, NE, SP	
{ 30	3			5	1738	1741	1845		BO, HA, MC, RE, SP

IONOSPHERIC EFFECTS OF SOLAR FLARES

(SHORT-WAVE RADIO FADEOUTS)

JANUARY 1960

Jan. 1960	Start UT	End UT	Type	Wide Spread Index	Import- ance	Observation Stations	Known Flare, UT CRPL-F 186
7	0008	0030	S-SWF	5	1	AD, <u>OK</u>	*
7	0419	0442	S-SWF	1	1+	<u>OK</u>	*
7	1505	1535	Slow S-SWF	5	1	BE, FM, HU, MC, <u>PR</u>	1504E
11	2100	2124	Slow S-SWF	5	2-	AN, HU, LA, MC, <u>PR</u> , WS	2040U
13	1850	1930	Slow S-SWF	5	1+	AD, AN, HU, <u>MC</u> , PR, WS	
15	0430	0500	Slow S-SWF	1	1+	<u>OK</u>	*
15	1312	1322	S-SWF	4	1-	<u>KU</u> , PR	
15	1340	1425	Slow S-SWF	4	1+	HU, <u>MC</u> , NE, PR	1334
15	1732	1800	Slow S-SWF	5	1+	AN, HU, <u>MC</u> , PR, WS	1730D
16	2245	2319	Slow S-SWF	5	2-	AD, AN, HU, LA, <u>OK</u> , TO, WS	2239
17	1618	1710	Slow S-SWF	5	2-	BE, FM, MC, PR, WS	*
19	1932	2029	G-SWF	5	2-	FM, HU, LA, PR, <u>WS</u>	1928
22	1650	1723	Slow S-SWF	5	1	BE, HU, MC, <u>PR</u> , WS	
24	0218	0257	Slow S-SWF	1	1+	<u>OK</u>	*
25	1718	1743	S-SWF	5	2	BE, FM, HU, MC, PR, WS	*
30	2027	2050	G-SWF	4	1	AD, AN, FM, PR, <u>WS</u>	

KU = Kuhlungsborn, G.D.R.

LA = Los Angeles, Calif.

TO = Hiraiso Radio Wave Observatory, Japan

*No known flare patrol.

COMMERCE - STANDARDS - BOULDER

**SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES**

Ottawa

FEBRUARY 1960

2800 Mc

Feb. 1960	Type*	Start UT	Duration Hrs:Mins	Maxima		Remarks
				Time UT	Peak Flux	
1	2 Simple 2	2124.5	3	2125.5	16	
2	2 Simple 2	1519.5	2.5	1520.3	30	
4	Post Increase		10		6	
2	2 Simple 2	2111	1	2111.3	35	
3	2 Simple 2	1538	2	1539	15	
4	Post Increase		5		5	
3	3 Simple 3 A	1708.5	1 30	1720	18	
2	2 Simple 2 f	1708.5	5.5	1710	60	
3	3 Simple 3 A	2019	50	indet.	7	
6	Complex f	2024	13	2026	25	
2	Simple 2	2100.5	4	2101.5	14	
4	8 Group (2)	1312.5	8.5			In sunrise oscillations
2	Simple 2	1312.5	2.5	1313	65	In sunrise oscillations
2	Simple 2	1316	5	1317.3	18	In sunrise oscillations
6	Complex f	1642	28	1655.5	35	
4	Post Increase		1 50		9	
4	2 Simple 2	1927.5	3.5	1928.5	85	
4	Post Increase A		40		6	
2	Simple 2	1931.5	2.5	1932.5	10	
4	2 Simple 2 f	2037	9	2040	125	
4	Post Increase		30		5	
5	2 Simple 2	1348.5	2.5	1349	50	In sunrise oscillations
6	2 Simple 2	1349	5	1351	12	In sunrise oscillations
13	2 Simple 2	2003	6	2004.5	13	
19	2 Simple 2	2106	5	2106.5	10	
22	3 Simple 3 A	1335	1 55	1430	20	
6	Complex f	1353.5	28	1359	340	

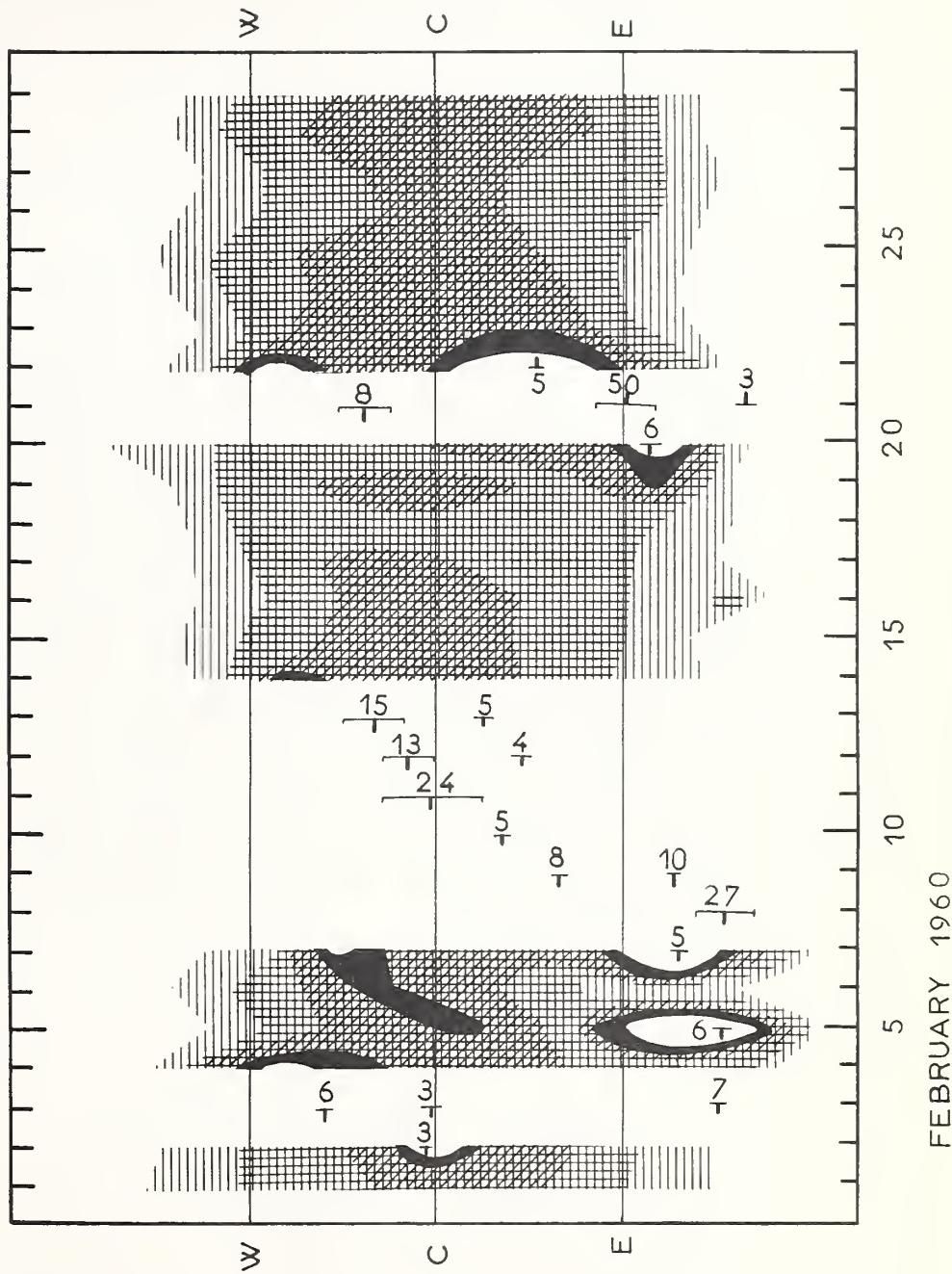
COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATIONS

FEBRUARY 1960

169 Mc

Nançay



FEBRUARY 1960

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

FEBRUARY 1960

BOULDER

167 MC

Feb. 1960	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity	Feb. 1960	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity
1	2	1415.9	1416.0	1.6	2*	7	6	1403	E	198	1
1	2	1446	1446.7	6	2*	7	7	1940		275	D
1	2	1452.9	1454.0	1.2	2*	8	6	1404	E	611	D
1	3	1454.8	1454.9	0.7	3*	9	6	1402	E	616	D
1	3	1522.8	1522.8	0.3	2	10	6	1400	E	2210	2
1	3	1529.3	1529.5	0.6	2	11	6	1358	E	623	D
1	3	1547.1	1547.1	0.2	2	11	3	1617.5		0.3	3
1	3	1554.5	1554.5	0.9	2	11	3	1812.0		0.2	3
1	2	1647.0	1647.7	1.2	2	12	6	1355	E	625	D
1	2	2205.0	2206.5	2.0	3	13	6	1355	E	627	D
2	3	1555.5	1555.5	0.2	2	14	3	1838.5		1838.5	0.2
2	3	1708.0	1708.0	0.2	2	14	3	1917.0		1917.0	0.2
2	2	1908.2	1909.5	2.4	2	14	3	2206.9		2206.9	0.3
2	3	2047.7	2047.7	0.1	2	16	3	1623.6		1623.6	0.1
2	3	2111.0	2111.2	2.0	3	16	3	1743.4		1743.4	0.2
2	3	2152.0	2152.0	0.4	3	17	3	0006.3		0007.2	1.3
2	3	2153.9	2153.9	0.3	2	17	3	0013.2		0013.2	0.1
3	3	1455.0	1455.0	0.1	2	17	2	0015.5		0015.9	1.5
3	3	1521.1	1521.1	0.1	1	17	3	0019.1		0019.5	0.9
3	3	1549.1	1549.2	0.9	2	17	3	0022.3		0022.3	1**
3	8	1708.0	1709.7	4.0	3	18	2	1507.0		1507.1	2.0
3	3	1840.1	1840.1	0.3	1	18	3	2129.0		2129.0	1.0
3	3	2021.9	2021.9	0.1	2	19	3	1516.8		1516.8	0.3
3	8	2023.8	2024.1	2.2	3	19	3	1548.5		1548.5	0.2
3	3	2337.9	2337.9	0.2	1**	19	7	2132		2147	64
4	6	1408	E			20	3	1421.5		1421.5	0.3
4	3	1829.0	1829.5	1.0	3	20	3	1505.9		1506.1	0.7
4	2	1831.5	1832.8	3.5	2	20	3	1513.0		1513.0	0.1
4	3	1929.0	1929.0	1.0	2	20	3	1610.0		1610.4	0.8
4	3	1932.5	1932.5	0.2	2	20	7	1637		2213	473 D
4	8	2037.6	2038.1	3.9	3	21	3	1353.7		1353.7	0.2
4	3	2046.5	2046.9	2.3	3	21	3	1358.2		1358.2	0.3
4	3	2112.2	2112.2	0.1	1	22	6	1517	E		208 D
4	3	2141.6	2141.6	0.3	2	22	3	1935.5		1935.5	0.4
4	3	2146.3	2146.3	0.3	2	22	3	2034.1		2034.3	0.9
4	7	2232		100	D	23	3	0024.0		0024.0	0.3
5	6	1405	E			23	3	1428.0		1428.0	0.1
5	3	1943.5	1943.5	0.2	3	23	3	2100.0		2100.0	0.2
5	3	1945.0	1946.0	2.0	3	25	3	1427.2		1427.8	0.8
5	3	2145.0	2145.3	1.0	2	25	3	1911.8		1911.8	0.2
5	3	2148.2	2148.3	0.8	2	25	3	2050.4		2050.4	0.3
5	3	2257.0	2257.3	1.6	3						
5	3	2325.6	2325.6	0.3	2						
5	3	2331.9	2331.9	0.4	2						
6	6	1405	E			610	D				

* On sunrise pattern

** On sunset pattern

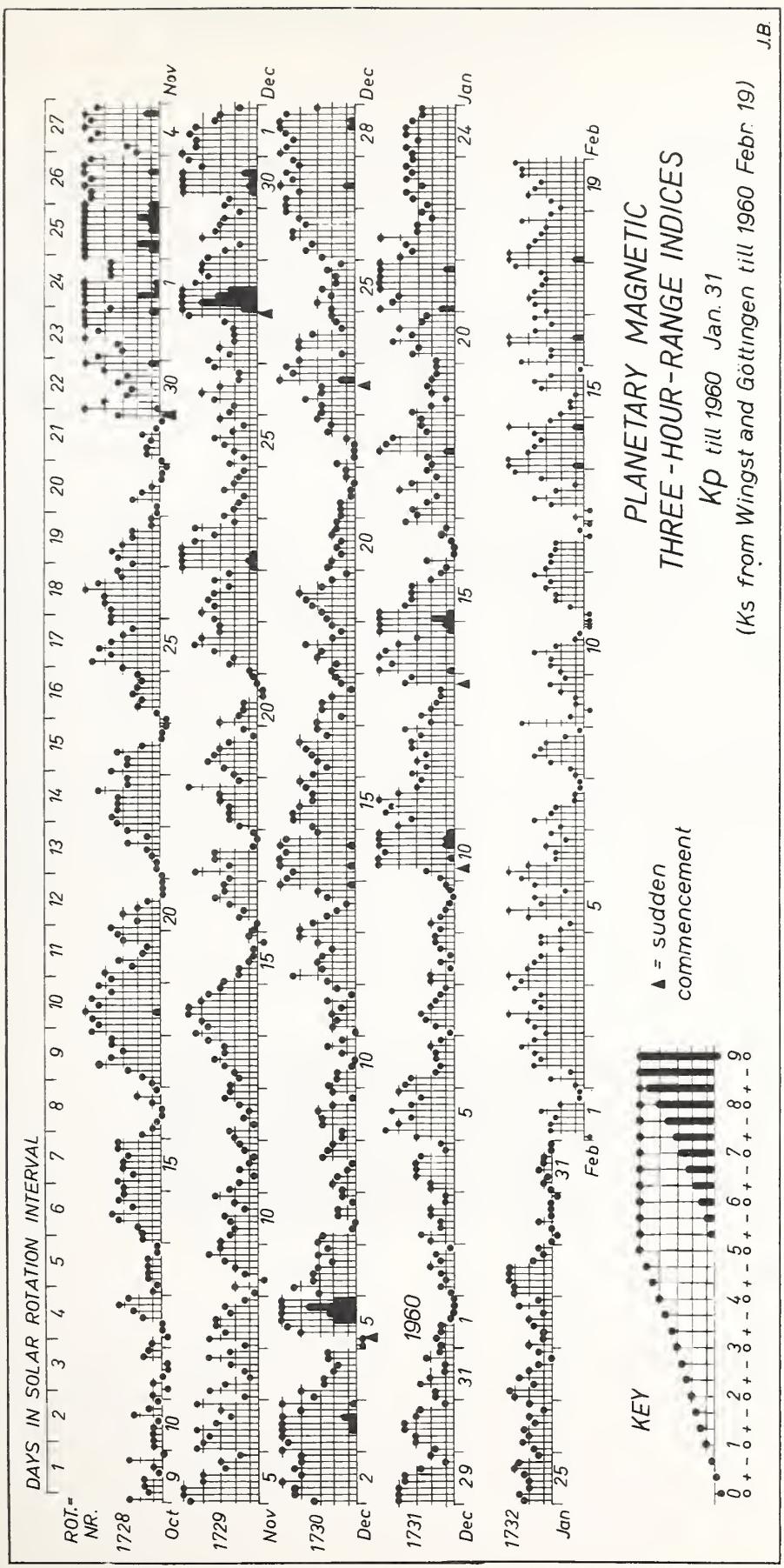
TIMES OF OBSERVATION

Feb. 1960	U.T.	Feb. 1960	U.T.
1	1410-0007	18	1351-0026 I 1645-1930
2	1409-0010	19	1415-0029
3	1407-0010	20	1347-0030
4	1408-0012	21	1346-1626
5	1405-0012		1718-1755
6	1405-0015		1759-1905
7	1403-0015		1942-2142
8	1404-0015		2230-2253
9	1402-0018		2333-0030
10	1400-0018	22	1517-0031
11	1358-0021	23	1400-0032
12	1355-0020	24	1343-0032
13	1355-0022	25	1341-0033
14	1355-0022	26	1339-0034
15	1353-0022	27	1337-0036
16	1354-0024	28	1336-0037
17	1352-0025	29	1335-0037

GEOMAGNETIC ACTIVITY INDICES

JANUARY 1960

Jan. 1960	C	Values Kp								Sum	Ap	Final Selected Days
		Three hour Gr. interval										
		1	2	3	4	5	6	7	8			
1	0.0	1+	2-	1+	1+	1-	0+	0+	0+	7+	4	Five
2	0.1	1-	1+	1o	1+	2o	1+	2-	1-	10o	5	Quiet
3	0.1	2o	3-	1+	1+	2o	2o	1o	1o	13+	6	
4	0.6	2o	2o	3o	3o	3o	3-	1o	1+	18o	10	1
5	1.1	3o	5-	4o	3+	4+	3+	3-	4o	29+	24	2 9
6	0.5	4-	3+	2-	1+	2-	2-	2o	1+	17-	9	30
7	0.2	1-	2-	2+	3-	2o	2-	1+	1o	13+	6	31
8	0.2	2o	2o	1-	1+	1-	1+	2-	2-	11+	5	
9	0.1	1+	2o	1+	1o	1-	0+	1-	1o	8+	4	
10	1.6	1+	2+	5o	5+	5-	6-	6-	5+	35+	43	
11	1.2	4o	3+	5-	4+	5o	4o	3o	3-	31o	27	Five
12	1.0	3+	2+	3o	2+	3+	3+	3-	4-	24o	15	Disturbed
13	0.8	2o	3-	2o	2-	1+	1+	4-	3+	18o	10	
14	1.6	5+	4+	5o	5-	4o	3o	5+	6-	37+	42	10
15	1.2	6+	5+	4-	3+	3+	3+	2o	1+	29-	30	11 14
16	0.5	1o	2+	0+	0+	1-	1+	1o	4-	11-	6	15
17	0.9	3o	3+	2+	2-	4o	3+	2-	2+	22-	14	21
18	1.2	2o	2+	6-	5-	4+	2+	3-	3-	27-	23	
19	0.5	3+	2o	1o	2o	2+	2o	2-	2-	16o	8	
20	1.1	2-	3+	3o	4+	3+	4o	3-	2+	25-	17	
21	1.7	6o	4+	4o	5o	5o	5o	6-	5o	40o	50	Ten
22	1.1	4o	3+	4-	5o	3o	3o	2o	3-	27-	20	Quiet
23	1.0	2+	3+	4-	3-	4-	3+	4-	3+	26o	18	
24	0.9	3+	4-	3o	4-	4-	3+	3-	3-	26o	18	1
25	0.6	2+	3-	2o	2o	2+	3o	3-	1+	18+	10	2 3
26	0.2	2-	2+	2o	2+	2-	2o	1o	2o	15o	7	7
27	0.3	3o	3+	2-	3-	2o	1+	0+	1+	16-	9	8
28	0.2	2o	1o	1o	2-	2o	1o	3-	1+	13-	6	9
29	0.7	3o	3o	3+	3+	3+	2-	1o	1+	20o	12	16
30	0.0	0+	0o	0+	1+	0+	0+	0+	0o	3o	2	28
31	0.1	0+	1o	1-	1+	1o	1o	0+	0+	6o	3	30 31
Mean:		0.69								Mean: 15		



CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

NORTH ATLANTIC

JANUARY 1960

Jan. 1960	North Atlantic 6-hourly quality figures				Short-term forecasts issued about one hour in advance of:				Whole day index	Advance forecasts (J-reports) for whole day; issued in advance by:				Geomag- netic K _{Fr}	
	00	06	12	18	00	06	12	18		1-7 days	1-7 days	1-7 days	1-7 days	Half Day (1)	Day (2)
	to 06	to 12	to 18	to 24						Final	J _s	SDW	J		
1	6-	5+	7-	6+	5	5	7	6	60	6		6		2	0
2	60	60	7+	6+	6	6	7	7	6+	6		6		1	1
3	60	6-	70	6+	6	6	7	6	6+	6		6		2	1
4	6-	6-	70	6+	6	5	7	6	6+	6		6		2	2
5	5+	6-	6+	7-	6	5	7	6	60	6		6		3	3
6	5+	50	70	6+	6	5	6	6	60	6		6		2	1
7	5+	6-	7+	7-	5	5	7	6	6+	6		6		2	2
8	6+	6+	7-	7-	6	6	7	6	7-	6		6		1	1
9	6+	60	70	7-	6	6	7	7	7-	6		6		1	0
10	7-	5+	70	6-	6	6	6	6	60	5		5		3	(5)
11	6-	50	6+	60	4	4	6	6	6-	5		5		(4)	3
12	5+	60	7-	6-	5	5	7	6	60	5		5		2	3
13	6-	6+	70	6-	4	4	6	5	60	4		4		2	2
14	50	5+	70	50	4	4	6	6	6-	4		3		(4)	(4)
15	4+	6-	7-	60	4	4	7	6	5+	5		5		(4)	2
16	6-	60	70	6+	5	6	7	7	6+	6		6		1	1
17	5+	6-	70	70	6	6	7	5	6+	6		6		2	3
18	6+	50	7-	70	5	6	6	4	6+	6		6		(4)	3
19	6+	6-	7+	6+	6	5	6	7	6+	6		6		2	2
20	6-	60	70	7-	6	6	7	7	6+	6		6		3	3
21	5+	6-	7-	5+	6	5	7	7	6-	7		7		(5)	(4)
22	5+	60	7-	6+	5	5	7	6	60	6		6		(4)	3
23	6-	60	70	6-	6	6	7	6	60	5		5		2	3
24	50	6-	6+	60	6	6	7	6	6-	5		5		3	3
25	5+	5+	7-	60	5	6	7	6	6-	5		5		2	2
26	6+	6+	70	7-	6	6	7	7	7-	6		6		2	2
27	6-	6+	70	7-	6	6	7	7	6+	6		6		2	1
28	6+	7-	7-	7-	6	6	7	6	7-	7		7		1	2
29	60	6+	70	70	6	6	7	7	7-	7		7		3	2
30	7-	7-	70	70	6	7	7	7	7-	5		5		0	0
31	70	6+	70	70	7	7	7	7	7-	5		5		0	1
Score: Quiet Periods				P	17	15	23	19		17		18			
				S	11	14	8	9		10		10			
				U	0	0	0	2		2		2			
				F	2	2	0	1		2		1			
Disturbed Periods				P	1	0	0	0		0		0			
				S	0	0	0	0		0		0			
				U	0	0	0	0		0		0			
				F	0	0	0	0		0		0			

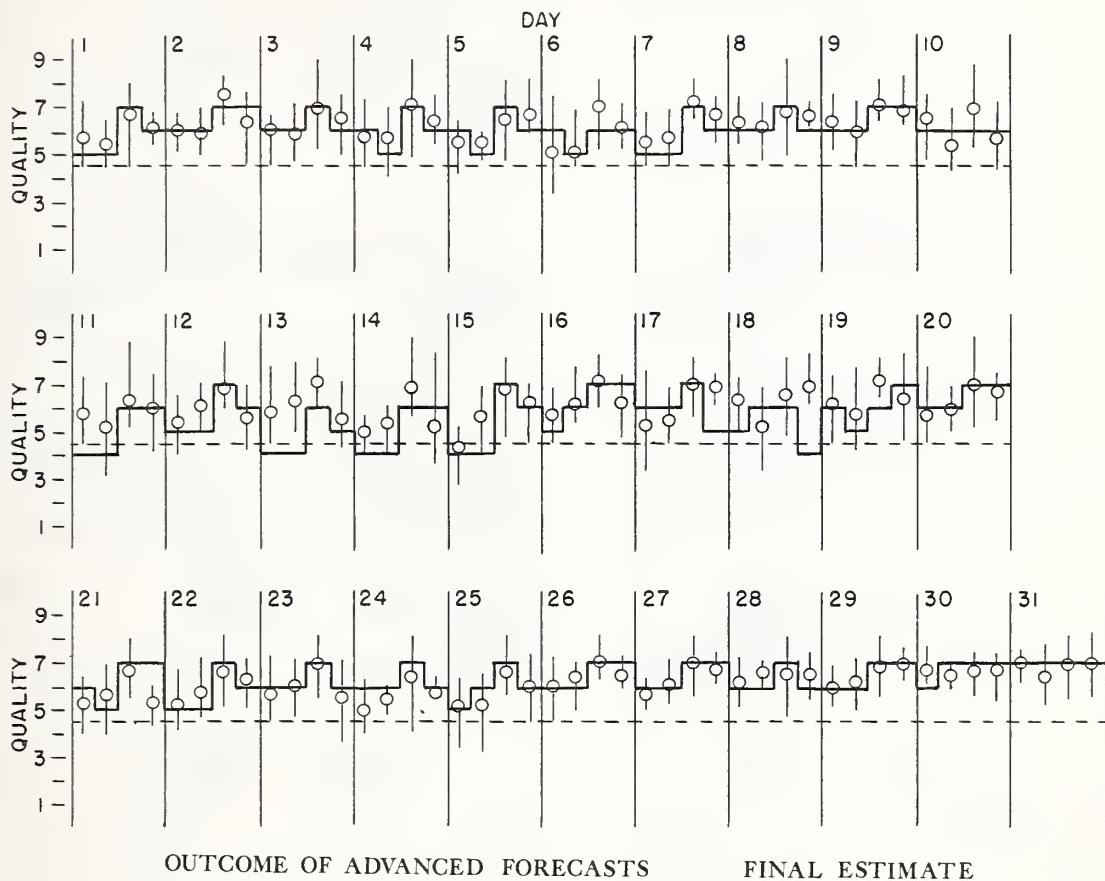
() represent disturbed values.

NORTH ATLANTIC

JANUARY 1960

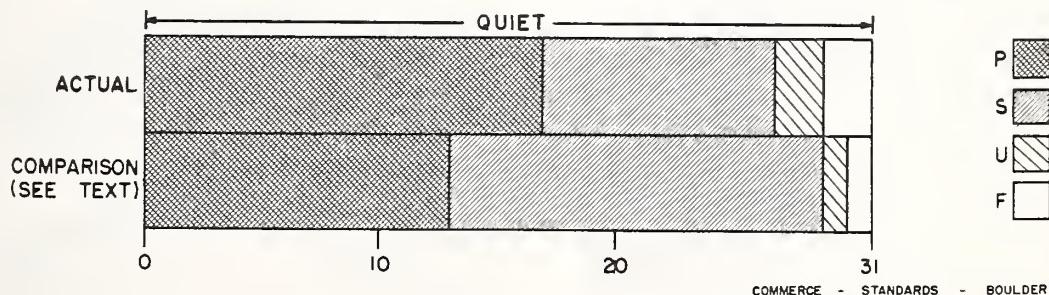
— Short-term forecast
 ○ Quality figure

| Range of reports



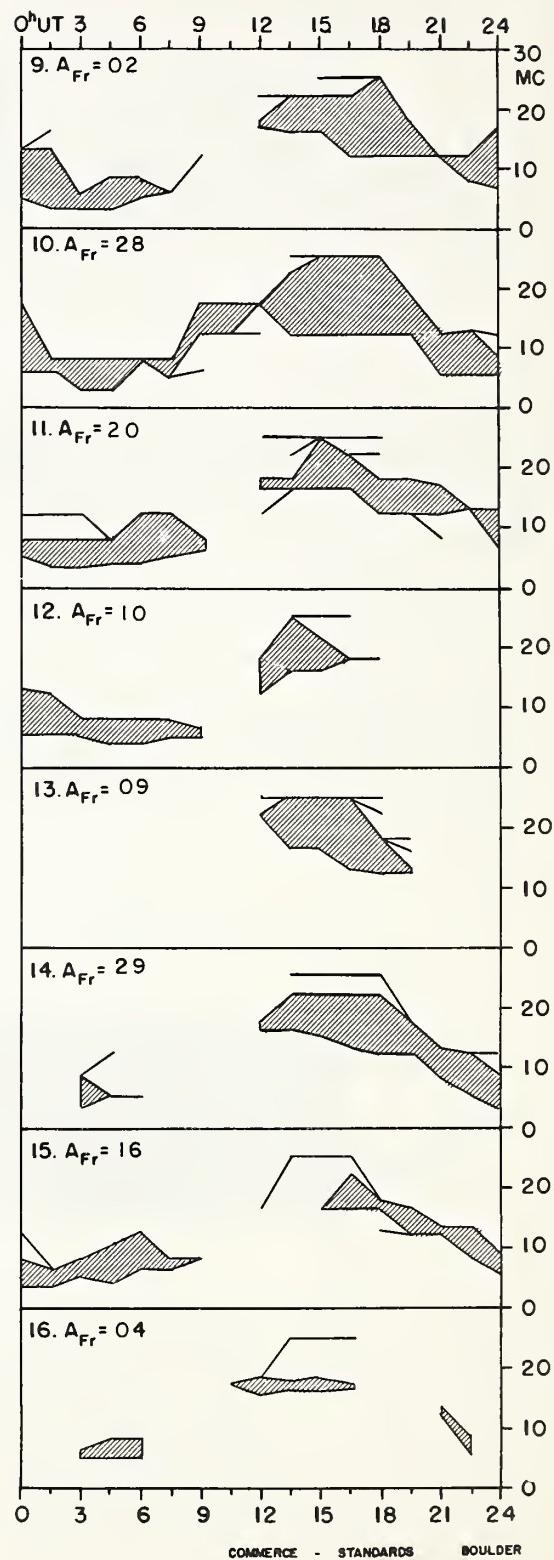
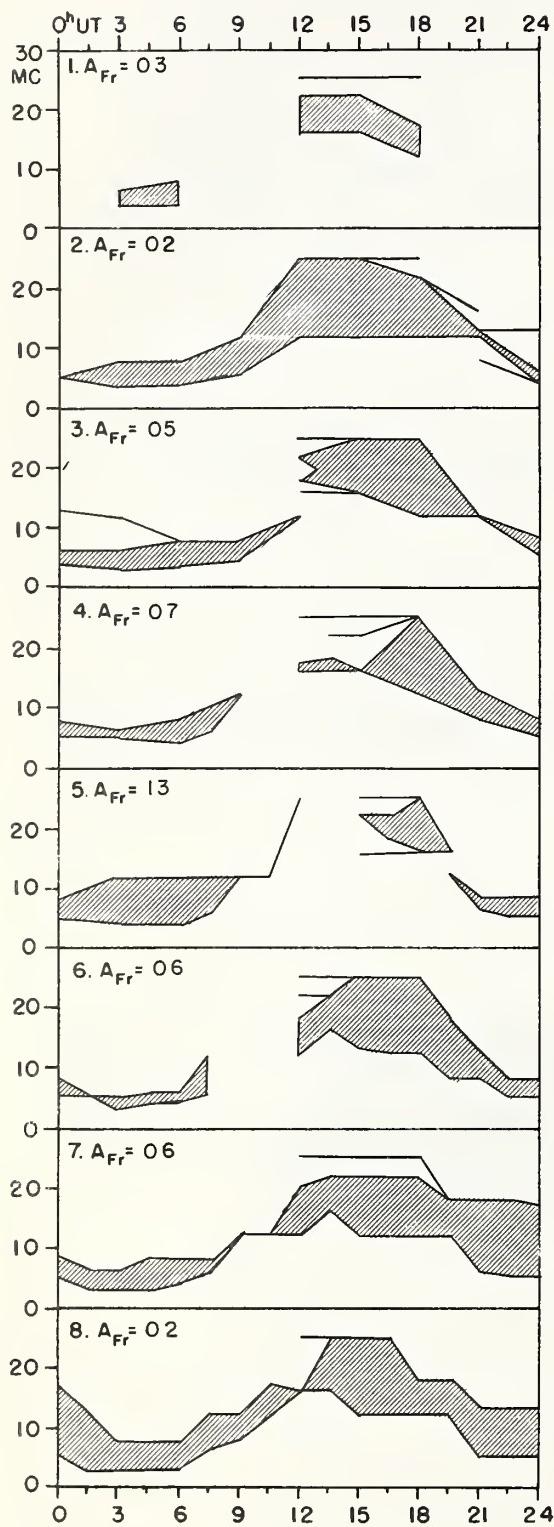
OUTCOME OF ADVANCED FORECASTS

FINAL ESTIMATE

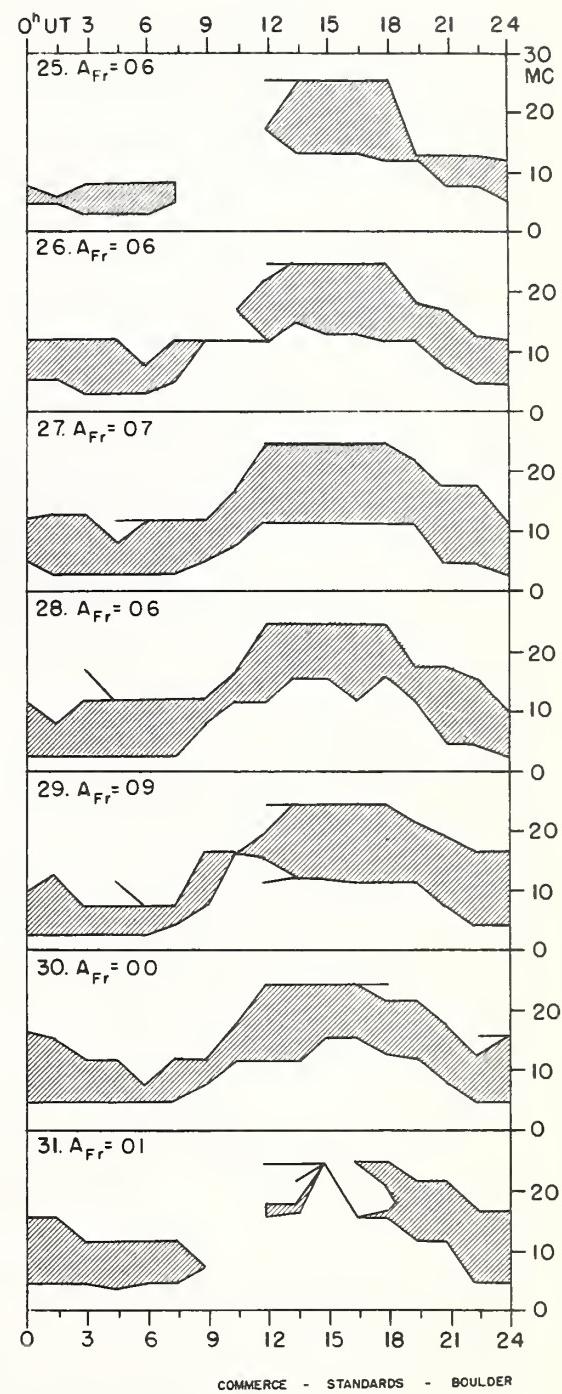
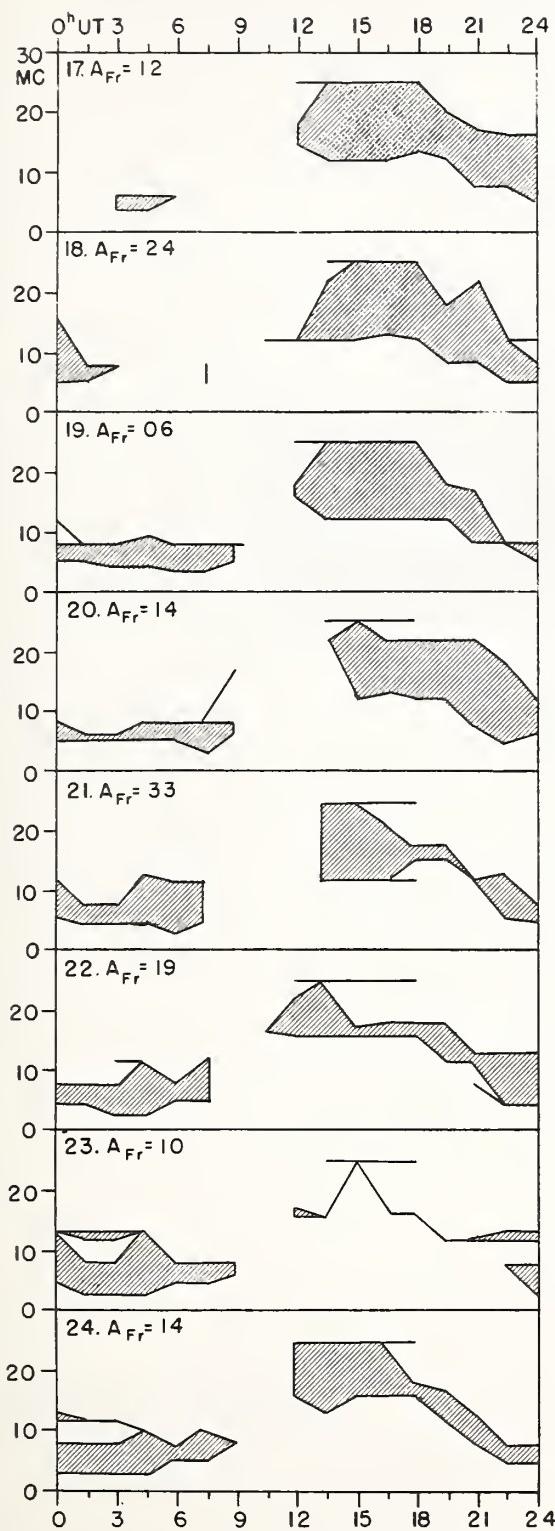


USEFUL FREQUENCY RANGES -- NORTH ATLANTIC PATH

JANUARY 1960



JANUARY 1960



Adapted from Observations by Deutsches Bundespost

COMMERCE - STANDARDS - BOULDER

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

NORTH PACIFIC

JANUARY 1960

Jan. 1960	North Pacific 12-hourly quality figures		Short-term fore- casts issued at		Whole day index	Advance forecasts (Jp reports) for whole day; issued in advance by:					Geomag- netic K _{S1}			
	0700 to 1900	1900 to 0700	0600	1800		1-7 days	1-7 days	1-7 days	1-7 days	Final Jps	SDW	Jp	Half (1)	Day (2)
1	5	6	6	6	6	6				6		6	1	0
2	6	6	6	6	6	6				6		6	1	2
3	7	7	6	6	7	6				6		6	1	2
4	7	6	6	6	7	6				6		6	2	1
5	6	7	6	6	6	6				6		6	(4)	(4)
6	7	7	5	6	8	6				6		6	2	2
7	6	6	6	6	7	6				6		6	2	2
8	6	6	6	6	6	6				6		6	1	1
9	7	6	6	6	7	6				6		6	1	0
10	5	6	6	5	5	5				5		5	(4)	(5)
11	6	7	5	6	6	5				5		5	(4)	(4)
12	7	6	6	6	6	5				5		5	2	2
13	6	4	5	4	6	4				4		6	2	2
14	5	4	3	5	(4)	3				3		4	(4)	(4)
15	6	5	4	5	6	5				5		5	(5)	3
16	5	5	5	6	5	6				6		6	0	2
17	6	6	5	6	6	6				6		6	2	2
18	6	6	5	6	6	6				6		6	(4)	(4)
19	6	7	5	6	6	6				6		6	2	2
20	7	7	6	6	7	6				6		6	3	3
21	6	4	6	4	5	6				6		6	(5)	(6)
22	7	7	5	6	7	6				6		6	(4)	2
23	7	6	6	5	7	5				5		5	3	3
24	6	6	6	6	6	4				4		4	3	2
25	7	5	7	6	7	5				5		5	2	2
26	7	6	6	7	7	6				6		6	2	2
27	7	6	7	6	7	6				6		6	2	1
28	8	7	6	6	7	6				6		6	1	2
29	8	7	7	7	8	6				6		6	2	1
30	7	8	7	7	7	6				6		6	0	0
31	7	6	7	6	8	5				5		5	0	0
Score:		Quiet Periods		P 11	14		8							
				S 15	14		15							
				U 4	0		4							
				F 1	0		3							
Disturbed Periods				P 0	2		0							
				S 0	1		1							
				U 0	0		0							
				F 0	0		0							

() represent disturbed values.

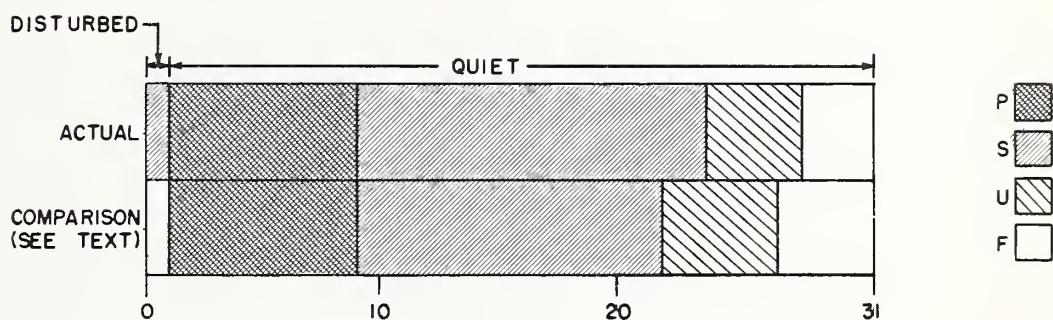
COMMERCE - STANDARDS - BOULDER

NORTH PACIFIC

JANUARY 1960

OUTCOME OF ADVANCED FORECASTS

FINAL ESTIMATE



ALERT PERIODS AND SPECIAL WORLD INTERVALS

INTERNATIONAL WORLD DAY SERVICE

FEBRUARY 1960

Issued Day/Time UT Feb. 1960	Advance Geophysical Alert	No.	Worldwide Geophysical Alert	Special World Interval
03/1900	McMath, Solar Flare 03/1715Z	48	Magnetic Storm 05/06XXZ	Start Special World Interval
05/1600		49		Finish Special World Interval
06/1600		50	Magnetic Storm 13/19XXZ	
14/1600		51	Magnetic Storm 16/09XXZ	
16/1600				
22/1600	Sacramento Peak, Solar Flare 22/1425Z			
27/1600	Honolulu, Solar Flare 26/2130Z			

COMMERCE - STANDARDS - BOULDER

